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# **Sociability vs Accessibility**

## **Urban Street Life**

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**Thesis submitted in partial fulfilment of the requirements  
for the degree of Doctor of Philosophy  
at University College London**

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## **ABSTRACT**

This thesis develops a theoretical and practical framework of analysis for measuring the liveliness of urban streets. It studies the inter-related functions of streets to cater for the dynamic activities of people (walking) and the more static activities such as stopping, sitting, standing, waiting, watching, eating, etc.

Practically, this framework measures the empirical relationship (the configuration) between these spatial and social functions, (the accessibility and sociability of the street). The sociability is measured through the capacity of the street to accommodate static activities. The accessibility relates to the ability of the street to accommodate and distribute static activities within its local and global network. Theoretically, the former regards the street as a setting, or a place wherein the dual processes of interactions between people and between people and the environment, are expressed. The latter subsequently regards the street as the conduit through which processes of interaction occur simultaneously.

The thesis also considers the impact of socio-physical and syntactical variables in the street. The socio-physical variables are the topography of the physical designs such as building indents, ledges, windowsills, etc. The syntactical variables are the topology of the spatial connectivity of the local and global network of the streets in the area. In doing so it asserts that pedestrian static activities are the predominant social variable in the street.



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# CHAPTER 1

## INTRODUCTION

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Since the rise of the postmodern movement in architecture, urban design, and planning in the early 1970s, the conventions used to design streets for people have constantly been challenged (Institute of Engineering 2002, DOPM 2002). Many of the design solutions established priorities for people and their activities in streets. Their purpose was to make streets ‘successfully function’ or ‘lively’ as ‘places of interaction’, ‘living spaces’, etc. However, the solutions arrived at for integrating pedestrians’ ‘static activities’ such as sitting, standing, chatting and browsing, compared with their dynamic movement were theoretically and empirically limited. In particular, an operational solution for balancing the use of streets for both static and dynamic activities has been unattainable (Appleyard 1987). While many streets have been much used for static activities and conducive to people sitting, waiting and meeting other people, others have much less so. Even in a highly dense shopping or commercial area, some streets have still failed to attract such activities. This is still a problem pertinent to urban design practice (Gehl, 1979, 1987, Elkington et al 1976, Whyte 1980, Anderson et al 1986, Appleyard 1980, 1987, Tibbalds 1992, Fyfe et al 1998, Haas Klau 1999, Living Streets 2000).

Static activities are fundamental to the social needs of people in streets (Gehl 1975, Tibbalds 1992). An analysis of such activities can offer insights into the processes of interaction between people and between people and their environment. Static activities are evident in ‘social’ relations and with ‘socio-physical’ relations to physical designs, such as building indents, windowsills, entrances, and cafés. They are also apparent in ‘spatial’ relations with the local and global (whole city network) aspects of streets (Rapoport 1976, 1990, Anderson 1986, Gehl 1975, Whyte 1980, Francis 1984, Hillier 1984) (see Chapter 2).

Along with the sociologists, increasingly, architects, planners, and urban designers have demanded that streets should be designed for public use; as part of the 'public domain' (Moudon et. al 1987, p.3, see also Fyfe et. al 1998, Minton 2006). Sociologists, in particular have claimed that unsuccessful streets are the result of 'loss of social interaction' in modern urban society (Simmel 1896, Ritzer 2000, Bennett and Watson 2002).

Much has also been debated about the 'efficiency' of streets. This debate has been fuelled by a growing recognition that how streets are designed and planned can determine the 'functional efficiency' of urban space (used for people). To the transport engineer, the efficiency of urban streets is determined according to the streets' ability to accommodate and distribute the movement of traffic and pedestrians (Richards 1966). Such is the standard which establishes the 'spatial function' of the streets. Streets are then categorised according to hierarchies, namely primary (main or big streets), secondary (the medium size streets), and tertiary (small side streets). Designing the streets to function in this way would primarily enable them to be accessible so that pedestrians are given easy access to move about and this approach has indirectly been the basis in the urban design process in making streets socially functional and hence sociable for people (Elkington et. al 1976, Southworth and Benarjee 1997).

Much theoretical and empirical research has been done on movement, focussing on walking activities. Whilst there is evidence of such social, socio-physical, and spatial importance and complexities, little research has been done on static activities in streets (Whyte 1988, Hillier 1984, Rapoport 1976, 1990, Stonor 2004). This limits an understanding of how static activities affect the process of actively enhancing social interaction in the urban environment. The concept of 'shared space use of streets' has introduced the measure of how residential streets can be integrated with the flow of traffic that enabled people to have better use of the streets (Appleyard 1980). The potential of such an integration with people sitting, standing, talking and waiting in urban street network is still insufficiently explored (see chapter 2). As such, previous references to the 'liveliness' of urban streets may not always be accurate (Appleyard 1988, Jacobs 1965, Jacobs 1993, Haas Klau 1999, Elkington et. al 1976). Therefore, the thesis investigates liveliness within the context of how urban streets environment could be better socially used for the city inhabitants.

The thesis argues that the efficiency of streets should not only be measured by the through-fare of automobile traffic. Instead, the efficiency of the street should also be analysed and determined within the context of 'liveliness'. Designers can influence this liveliness based on static activities through their forms and architecture. For these reasons, this thesis argues that urban design practice has often failed to understand the theoretical and empirical processes by which these important activities occur. Therefore, urban designers have often inadequately provided sufficient use of streets for people. The thesis identifies static activities as a vital urban variable for understanding the theoretical processes of how people interact with one another and with the environment of the streets. Prioritising and optimising the use of streets for static activities would allow them to function more fully and practically as 'settings' or 'places of interaction'.

Subsequently, the thesis also argues that the 'liveliness' of streets should be measured in accordance with their social and spatial functions, and, therefore, their sociability and accessibility. In this way, the relationship between people's static and dynamic activities can be analysed simultaneously, and so a balance in the use of the street can be achieved. This may then lead to a systematic, theoretical, and empirical definition of the liveliness of streets for people.

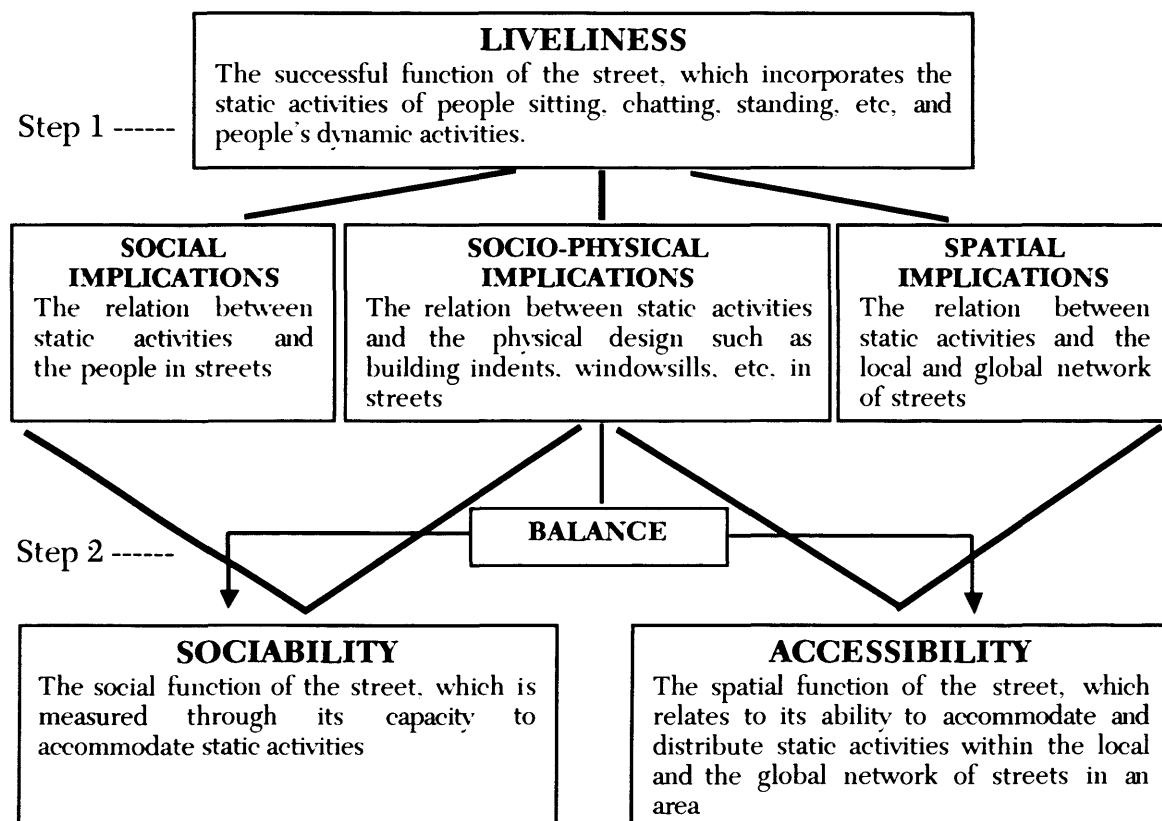


Figure 1.1. Liveliness and streets



This thesis therefore defines ‘liveliness’ as ‘the successful functioning of the street, which incorporates people performing static activities, such as sitting, talking, and eating, and dynamic walking and movement activities’. This incorporates the social, socio-physical, and spatial aspects of people in the street (Gehl 1975, Whyte 1980, Anderson et. al 1986, Moudon 1987, Hillier 1993). Liveliness is achieved by successfully balancing the sociability and the accessibility of the street, where sociability is the social function of the street as measured through the capacity of the street to accommodate static activities; and accessibility is the spatial function of the street, or the ability of the street to accommodate and distribute activities within its local and global network (chapter 3) (see figure 1.1.)

This chapter is divided into four sections. Section 1.1 is the background covering the context for which static activities have been taken advantage of in the practice of designing lively urban streets for people. Section 1.2 sets out to explain the scope of the problem. It explains how this problem could be approached theoretically and practically through a more systematic consideration of static activities. Section 1.3 lists the objectives of the thesis. Section 1.4 provides an overview of the methodology. Finally, section 1.5 presents the overall structure of the thesis.

## **1.1. THE LOST ACTIVITIES IN STREET LIVELINESS**

Pedestrians do not only walk. People in streets also perform a considerable number and variety of static activities when they sit, stand, chat, eat, watch, etc (Gehl 1975, Whyte 1980, Moudon 1987, Living Streets 2000). Throughout the day, more often than walking, people in streets sit or stand and chat, smoke cigarettes, wait, distribute leaflets, sell, entertain, or simply ‘*watch other people*’ (Whyte 1980, p. 273). However, despite their considerable presence, the occurrence of static activities in streets is subtle. The extent to which they exist varies from one street to another, yet they are empirically significant (Whyte 1980, Francis 1984). Any individual or group of people can perform static activities. Such activities constitute both formal and informal yet vital everyday activities for local residents and workers (‘familiar’), visitors and tourists (‘strangers’) (Goffman 1956, 1965, Bauman 1990). Static activities also take various forms of human gesture and body language. As such, when a person is sitting or standing, he or she could also be observed simultaneously talking to other people, eating, smoking, reading, gazing, smiling, etc. This shows that static activities

manifest themselves in (both) people's gestures and behaviour. People can also sit in /stand at different types of physical design, such as building indents, steps, entrances, and windowsills. Additionally, people can (also) sit or stand on different hierarchical levels of streets. This would generate 'a pattern' of people's static activities within the local or the global context of an urban area (Elkington et. al 1976, Appleyard 1980, Golledge and Stimson 1997).

As noted above, sociologists and psychologists have observed that people sitting and chatting in streets communicate both verbally and non-verbally. Through these communications, people generate social relations (Goffman 1956, Argyle 1959). Meanwhile, architects, urban designers, and geographers have distinguished these two aspects of communication not only between people but also between people and the environment (Barker 1968, Sommer 1969, Rapoport 1976, Lawson 2001). Concurrently, these also indicate how static activities react directly and indirectly with people, to the physical designs embedded in buildings and the land uses in the layout of the streets, and to the spatial connectivity of the streets within the local and global aspects of the urban space.

Architects, urban designers, and planners have therefore defined the 'liveliness' of streets arbitrarily without a clear and systematic evaluation of the term. The trend continues, even though designers implicitly believe that streets should function as a 'place of interaction, where people meet, interacting with one another as well as with the environment, and not only as conduits for people going from one destination to another within the city (Anderson et. al 1986, Haas Klau 1999, Jacobs 1993). The lack of empirical input in the process of designing streets for people's static activities has meant that the subject of 'liveliness' remains poorly understood.

## **1.2. SOCIAL, SOCIO-PHYSICAL AND SPATIAL IMPLICATIONS OF STATIC ACTIVITIES**

Broadly, sociologists, psychologists, and social theorists have indirectly addressed static activities within the context of macro interaction. They argue that people watch other people on the streets (hotel workers serving guests, waiters serving customers in restaurants, etc); they constitute the general social situation, which expresses itself in the broad context of social interaction between people within urban society. These

social situations exist amongst the general organisations, body of institutions, social classes, communities, strangers, and local people (Goffman 1956, Sommer 1969, Giddens 2000, Strohmayr 2002).

On the other hand, geographers and environmental behaviourists argue that the social situations within society can reflect interaction of a spatial nature. This means that such interaction is perceived between people and the environment (spaces or places) as existing within the local or individual and global or regional areas, which include the different geographical scales of cities, towns, neighbourhoods and streets. Geographers and environmental designers believe that the condition of streets, urban neighbourhoods, towns, and cities in general may affect the individual's condition, as well as that of the particular population, ethnic group, or society (Erskine 1976). These two aspects of interaction by their very nature implicate the broad aspect of static activities in the social and spatial situations of urban society.

Static activities were also implicated in a specific situation. They appear within the micro-context of a social situation, which is related to the behavioural conduct of individuals, or groups of people. Sociologists and psychologists often study these particular situations. Such scholars believe that the general occurrence of static activities can increase or decrease social interaction between people (Goffman 1956, Argyle 1969, Sommer 1969, Stokol 1976). For instance, when people are sitting or standing while executing certain gestures such as smiling, frowning, gazing, or chatting, they may or may not generate responses from other people. Some of these cases have helped the understanding of theoretical aspects of people's behaviour, which may be useful to urban designers. Sommer (1969) has promoted such studies on the behaviour of people in architecture within the constraints of the office space, and the school.

Consequently, architects, urban designers, and planners acknowledge the existence of static activities both socially and spatially. In particular, the spatial relations of static activities are addressed within the context of traditional practices in architecture, urban design, and planning. Influenced by geographers, these cases principally understood interaction between people and the micro and macro scales of the environment. Their relationship is manifested through static activities within urban spaces and places, including buildings, parks, and street spaces. This reflects the



importance of addressing the 'topography' of the street, making it conducive to people. In another development of 'space syntax' studies, Hillier (1984), considers the relation between people and the environment on the macro or global scale of urban space. Such a global relation also reflects the 'topology' between people and the environment (space) (see section 1.4.3). Static activities therefore form a spatial as well as a socio-physical relationship between people and the environment (Sommer 1969, Kostof 1976, Gehl 1975, Whyte 1980, Seamon 1985, Hillier 1984, Moudon et. al 1987, Jacobs 1993) (see Chapter 4).

Indirectly, at least, most of these studies acknowledge the important presence of static activities. However, they have not been able to clarify the theoretical and objective implications of static activities as they relate to interaction [taking place in streets]. Anderson (1986), in particular, relates the failure of designing streets for people to the inability of urban designers, architects and planners to recognise the nature and limits of the interaction that takes place in streets. Furthermore, these spatial and socio-physical studies have not addressed the psychological and sociological aspects of people's behaviour (Lawson 2001) (see chapter 5).

This thesis argues that streets, which have been improved or designed to be lively for people, are not necessarily conducive to static activities (Gehl 1975, Whyte 1980, Francis 1984, Anderson et. al 1986, Stonor 2004) (see Chapter 5, 6 and 7). It seeks to address the above problem by raising these questions;

- Have the social, socio-physical and spatial implications of the static activities of pedestrians been explored as an aspect of interaction (see chapter 2)?
- Could the empirical manifestation of static activities be developed objectively (implying that they are systematically examined) to explain the theoretical (abstract) existence of interaction (see chapter 2)?
- Could this development later be adopted as a practical design solution in determining the social ('sociability') and spatial ('accessibility') function(s) of streets (see chapters 3, 4, 5 and 6)?

- Could the ‘sociability’ and ‘accessibility’ of streets be balanced through better considering static activities as achieving liveliness (see chapters 3, 4, 5 and 6)?

Two main problems are addressed in responding to these questions: the first argues for the need in the architecture, urban design, planning, and transport disciplines to understand and examine in detail the theoretical and empirical implications of people performing static activities in streets. The purpose is to explore the social, socio-physical, and spatial implications of static activities in designing streets for people. The thesis brings to light other issues (relating to architecture, urban design, planning, transport, social science, human geography, environmental behaviour, sociology and psychology) that have impinged on the problem of designing lively streets for people. The thesis seeks to demonstrate how the theoretical and empirical importance of static activities has been taken for granted and misrepresented in the design process (see chapter 2 and 3).

The second issue addresses the particular need in urban design practice to develop an empirical operational framework based on people’s executing static activities. Such a framework would assert static activities as the predominant urban variable for designing streets for people. Consequently, the two main concepts of the ‘sociability’ and ‘accessibility’ of streets would be developed via this framework so as to understand how the inter-related social, socio-physical, and spatial implications of people executing static activities could influence the liveliness of streets in the urban environment (see chapters 3 and 4). In turn, static activities could be comprehended systematically in order to design a successful or ‘lively’ street.

### **1.3. OBJECTIVE**

The thesis measures the impact of static activities on the sociability and accessibility of the urban streets. The following describes the key research objectives:

- i. To understand the distribution of social, socio-physical and spatial variables in street spaces.
- ii. To understand the relationship between these variables and the sociability and accessibility of streets

- iii. To understand how streets can be designed to achieve a balance between static and dynamic activities.

## **1.4 METHODOLOGY**

The selected methodology combines three research approaches:

### **1.4.1. Literature Review**

A review of the literature was carried out in order to understand the current debate on the liveliness of streets and how the streets function in the everyday activities of urban society. It includes contributions from architects, social scientists, urban designers, planners, geographers, sociologists, and psychologists. The literature review explores in detail many of the issues outlined above.

### **1.4.2. Observation Analysis**

The second aspect of the methodology includes the observations of static activities using the 'snapshot' method (Francis 1984, Space Syntax Manual 1999). This method has been widely adopted in the assessment and planning process of urban analysis (Francis 1984, Moudon 1987). The 'snap-shot' method maps out the actual type of static activities of people and the physical designs in which they are located in the streets. It enables the relationship between the different types of static activities to the physical designs in influencing the concentration (density) of static activities in a certain street environment to be investigated. This relationship is later analysed within the context of the sociability of the streets (see chapters 3, 4 and 5).

The observations focus on investigating the condition of the physical spaces occupied by static activities in primary, secondary, and tertiary streets in the urban area, leading to a better understanding of the conditions of such hierarchies of streets as an input into the process of analysing and proposing strategies for designing lively streets for people.

### **1.4.3. 'Space Syntax' 'Axial Line Analysis'**

The theory of natural movement from the 'Space Syntax' method states that the pattern of pedestrian movement in urban space is primarily generated by its 'spatial configuration', as pedestrians tend to follow the shortest and most direct route when moving from place to place (Hillier, Penn, Hanson, Grajewski, 1992, Hillier 1996, 1989). Axial line analysis of space syntax is calculated by a computer simulation, which analyses the distribution and flow of dynamic movement (which includes people, cycles, traffic, etc) in streets. This constitutes one of the important design issues relating to the accessibility of streets in urban areas (Buchanan 1965, Hill 1984).

One of the principals used in axial line analysis indicates that the more the streets in an area are integrated with one another, the more they are accessible to movement. Accordingly, axial line analysis gives the 'integration value' of the streets within an area. The integration value is recognised as the empirical value of one local space (an area, an individual street, etc) in relation to the global network of space. The value is determined by the connectivity of the local street (local integration space) in relation to the network of streets in a wider area (global integration space). The connections between the local and the global network of space form the 'spatial configuration' of an urban space (Hillier et. al 1992). This raises two questions. Firstly, if the pattern of people's movement is affected by the spatial configuration of the urban space, how does the configuration make streets accessible to static activities? And, what are the other physical conditions of the streets that influence static activities?

To answering the above questions, the thesis adopts the axial line principal in analysing the local and global connectivity of streets for accommodating and distributing static activities in the studied area. This helps identify the influence of the dynamic aspects of the streets in an area from the larger structure (global scale) to a smaller structure (local scale). In particular, the space syntax method is used to analyse the relationship between the concentrations of static activities with the local connectivity of the individual streets, and to predict the likely concentration of static activities that may occur on a certain street in the area (see chapters 3, 4 and 5).

## **1.5 THESIS STRUCTURE**

This chapter has identified the key arguments in order to establish a synthesis of the theoretical and objective aspects of interaction between people and between people and the environment, and static activities in the streets.

Chapter 2, *Streets For People*, reviews the literature on how urban designers understand and interpret the broad aspects of designing the social use of urban spaces. It focuses on the misleading ways in which urban design practices understand and interpret the social use of streets. It examines the contemporary provisions in designing streets for people and focuses on the importance of static activities to the design of lively, sociable and accessible streets. It leads to a further understanding of the social, socio-physical and spatial aspects of streets in order to incorporate within them people's static activities. The chapter deals with the issue of *Understanding Everyday Lives of People in Streets*; incorporating the sociological and psychological aspects of the everyday life of society in contemporary urban areas. It discusses the importance of the co-existence of interaction and static activities. As such, the intangible (abstract) aspect of interaction is envisaged objectively through the tangibility (physical entity) of static activities in the streets. The chapter explores the important role of streets as a public realm in modern urban living. By accommodating and treating static activities as the predominant variables it raises the argument of how streets could function successfully for people. It later invokes the process of *Thinking Streets*; a new way of thinking of how people use streets. It studies the interplay of the social, socio-physical, and spatial aspects of static activities as the key variables influencing the design of street sociability and accessibility. This forms the basis of a systematic and holistic operational framework for analysing and designing lively sociable and accessible streets for people. Subsequently, the chapter briefly introduces the theoretical and practical development of the two key concepts, the sociability and accessibility of streets.

Chapter 3, *Thinking Streets: Sociability and Accessibility of Streets*, approaches the problem of designing streets for people by focusing on the detailed development of the theoretical and practical concepts of sociability and accessibility of streets. It examines the theoretical and practical aspects in designing street sociability and accessibility through the incorporation of static activities. In doing so, the chapter relates the detailed theoretical and practical importance of the social, socio-physical,

and spatial aspects of streets in facilitating the sociability and accessibility for making streets lively, places of interaction for people.

Chapter 4 describes the *Methodology and Case Studies* of the thesis. Part I, *Methodology*; details the theoretical and practical synthesis of the methods adopted for developing the empirical analytical framework for designing the sociability and accessibility of streets. It associates the synthesis of this framework with the 'statistical' and 'syntactic' calculations of the key social, socio-physical, and spatial variables for analysing the sociability and accessibility of the streets. Part II, *Case Study*; describes the cases studied, namely eighteen streets surrounding Regent Street in Central London in the UK. It describes the reason for applying the above framework to these cases.

Chapter 5, *Quantitative Analysis of the Sociability and Accessibility of Streets*; analyses the eighteen cases through the proposed method.

Chapter 6, *Social, Socio-physical, and Spatial Implications of People in Streets*; interprets and highlights the results of analyses of the cases studied above.

Chapter 7, *Conclusions*, identifies the qualities and criteria relevant for designing lively primary, secondary, and tertiary streets in urban areas. The qualities and criteria are incorporated in the analysis of the sociability and accessibility of the streets. The conclusion discusses the key paradoxes of the analysis, which are identified as limitations to the methods. It also establishes recommendations for future research.

## CHAPTER 2

### STREETS FOR PEOPLE

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*Goffman (1956) managed to give a web of normative beliefs that facilitate communication and social interaction. Nevertheless, the development of theoretical constructs, explicating the structure of interaction routines, has not advanced much beyond the 'dramaturgical models' that he proposed over a quarter century ago.*

(Ritzer 2000)

*'It simply never occurs to us to make streets into oases rather than deserts. In countries where their function has not yet deteriorated into highways and parking lots, a number of arrangements make streets fit for humans; pergolas and awnings (that is, awnings spread across a street), tentlike structures, or permanent roofs. All are characteristic of the Orient, or countries with an oriental heritage, like Spain. The most refined street coverings, a tangible expression of civic solidarity –or, should one say, of philanthropy–are arcades. Unknown and unappreciated in our latitudes, the function of this singularly ingratiating feature goes beyond providing shelter against the elements or protecting pedestrians from traffic hazards.'*

(Rudofsky, Architecture Without Architects, 1969, p.14)

To the present day, the problem of making lively streets for people still prevails although there have been various urban design measures that give priority to the concept of people in streets being implemented (Haas Klau 1999, Institute of Engineering 2002, Engwicht 2000, Living Streets 2000, 2002, Minton 2007). Ironically, though streets form three quarters of the public space (or public realm) in urban areas, they have been insufficiently researched. Only recently has much attention been given to improving street spaces in urban areas ([www.dft.gov.uk/stellant](http://www.dft.gov.uk/stellant), The Institute of Engineering 2002, Stonor 2004).

Certain professionals have admitted that streets are sometimes designed to satisfy certain road design standards rather than (the) people (Southworth and Joseph 1997). Yet, cross-references are often mistakenly made which claim streets that are sociable are also accessible, and vice-versa. For instance, in accordance with the general street design standards, traffic lights are provided or footpaths are widened. These measures are adopted in order to provide easy access to pedestrians walking and crossing the streets. Often, the sociability and accessibility of streets are interchangeably implicated in such manner of design (see Chapter 3 on designing the sociability and accessibility of streets). These are the typical cases in the big (primary), medium (secondary), and small (tertiary) sized streets in cities (Elkington et. al. 1976, Appleyard 1980, Caliendo 1986).

These conventions (the customary practices in accordance with transport design schemes) have specifically 'misled' the early design solutions for promoting the social uses of streets (Southworth and Ben-Joseph 1997). Many of these design standards have been criticised for mainly providing ease of access for people walking through the streets. Such standards have made streets more accessible than sociable for people. They have addressed people and their activities in a very broad manner, and lack empirical clarity. They focus heavily on mobilising people from one place to another in the urban environment (Ritter 1964, Buchanan 1965, Appleyard 1980, Engwicht 2000).

A number of urban and street design management matters deal with static activities (Tibbalds 1992, Moughtin 1992). They generally assume that their way of design will make streets lively (or some authors prefer the term 'sociable') as they incorporate such aspects of people's activities. However, Whyte (1980) claims that much of these schemes have been based on intuition rather than objective observation of how people behave in streets. Some authors have specifically added that studies on static pedestrian spaces in streets are still lacking (Rapoport 1990, Hillier 1984).

Recent research has recommended that designers making the above kind of people-based approach should liaise with environmental psychologists, who have raised the issue that people interact through their 'behavioural' conduct (The Institute of Civil Engineering 2002). This would lead to such a study of interaction being examined in



relation to the type of activities of people occurring in buildings, public places, urban, and street spaces (Argyle 1969, Sommer 1969, Lawson 2001).

The thesis argues that a lack of understanding in this area to date has restricted people from executing everyday stationary activities in streets. It projects the need to provide a theoretical and practical design framework for analysing and assessing how static activities occur in streets. This would set a threshold for guiding the process of designing lively streets for people.

Drawing from the above, and for the purpose of this thesis, a street is defined as the following: a linear physical entity of an urban component, which forms the space between buildings. It is accessible to people and commonly regarded as a conduit for connecting the dynamic moving activities in a city, of traffic and pedestrians. It is also a linkage able to transform itself as a setting; a sociable place, which is capable of absorbing static pedestrian activities from which the success or liveliness of streets can be enhanced and within which are implicated the process of interaction between people, and between people and their environment.

This chapter is themed 'Streets for People'. It examines the specific characteristics of people performing static activities and focuses on designing good quality urban street life. The following questions are raised. What characterises streets as 'places of interaction', a term traditionally adopted in urban design practice? What are the fundamental urban variables for measuring the liveliness and the successful function of streets for people? Have urban design measures provided an objective (empirical) and holistic (addressing the local and global geographical scale of streets) analytical framework of design for influencing people's activities in streets?

The chapter is divided into the following sections. Section 2.1 relates the examination of the process of interaction that takes place to how streets are designed for people. It compares the way urban designers perceive and address interaction in the social aspects of uses of urban and street spaces to those of environmental behaviourists, sociologists, and psychologists. Section 2.2 focuses on some urban design interpretations of the social use of streets. It reviews the ways current architectural, urban design, and transport planning practices provide the specific design solution for prioritising streets for people. Section 2.3 discusses the general theories of streets for

people. Section 2.4 examines contemporary provisions in promoting the daily function of streets for people. Section 2.5 offers practical views of the physiology of streets and considers how the practical function and the problems encountered in the use of (the) streets by people should be addressed. Section 2.6 discusses the intricate use of the streets by people's static activities. It pursues the way in which the process of designing urban and street spaces for people might be directed. Finally, section 2.7 examines the way urban design practice assess the successful use of streets for people.

## **2.1. QUESTIONING STREETS AND INTERACTION**

In order to understand the origin of the problem in designing streets for people, it is important to raise issues relating to the rise of modernity, which has been criticised as socially problematic for contemporary urban living. Ritzer (2000) argued that these sociological issues could be traced back from the work of the classical German sociologist, Georg Simmel (1896). Simmel claimed that one cause of the social problems in modern society was the absence of social interaction between people. During the nineteenth century, the rise of urbanisation caused a loss of the sense of public life in the urban environment. However, only recently such an influence from sociological thinking regarding the use of streets in the urban environment has been revived. It focuses on the sociological importance of people's use of street and urban spaces (Ritzer 2000, Bennett and Watson 2002, Highmore 2002).

Inspired by Simmel (1896), Goffman's (1956) contemporary sociological study examines the pattern of interaction in urban society by observing the everyday behaviour of people in public places, including hospitals, restaurants, organisations, urban and street spaces (Ritzer 2000). For this more expansive type of examination, Goffman was recognised as a notable contemporary sociologist, who revolutionised the study of the micro-social in society.

More recent sociological studies such as 'Understanding Everyday Life' have drawn attention to streets. These studies regard the street as an important site, where congregations of urban inhabitants are manifested (Douglas 1974, Highmore 2002, Bennett and Watson 2002).

Berman (1984) was aware of the relevance of such studies to the contemporary urban life-style. He suggested that the battle for public space was at the heart of the modernist quest. Berman expanded the work of Simmel by treating streets as a microcosm of modern life. He claimed that it is important not to take the use of streets for people for granted as they stand out as representative of the larger aspect of urban living.

By the 1970s, various studies influenced by Simmel marked an era when architects and planners began to realise the sociological importance of the use of streets by people in cities. Why and how would these sociological aspects of streets be addressed in urban design practice? How do the sociological aspects influence the process of designing streets for people?

These questions could be answered by paying attention to parallel debates that were going on at the time. On the one hand, sociologists and psychologists were arguing about the social problem as it relates to social interaction. On the other, architects, urban designers, planners, and transport planners were concerned with the issue of the loss of social interaction within the context of the use of urban and street spaces for people. Such a context of use relates the social, socio-physical, and spatial implications in people's behaviour to one another and to the urban milieu. Inherently, these implications manifest interactions between people and between people and the environment (Rudofsky 1969, Rapoport 1976, Gehl 1975 Whyte 1980).

To sociologists, human actions of any significance are meaningful actions. According to Douglas (1974), *all significant orderings of human phenomena, which alone make any science of those phenomena possible, are the result of some kind of attribution of social meaning; and no significant scientific description, analysis, or explanation of those orderings is possible without some fundamental consideration of those social meanings. By construing people as objects, a detailed quantification can offer a scientific explanation of certain social situations* (p.7).

Turner, Beeghley & Powers (1998) explain that the discipline of sociology is pursued because of the inborn curiosity of humans about their lives and the conditions of their existence. This curiosity is implicated in religion, philosophy, ideology, and the many

other ways that humans can think about themselves and their world. The approach eventually led to the emergence of sociology as a discipline concerned with understanding human behaviour, interaction, and organisation. According to these three authors, *sociology is a systematic study of what people do in their daily lives and routines* (ibid. p.1).

The above clearly implies that people's cultural behaviour has an impact on the way urban society carries out its everyday activities in streets. It is thus appropriate to suggest that the development of sociological studies after Simmel, when the loss of social interaction in modern society began to be criticised, has exposed the problem of designing streets for people. The problem could be examined by integrating the sociological aspect of the everyday life of urban society with the daily function of streets for people.

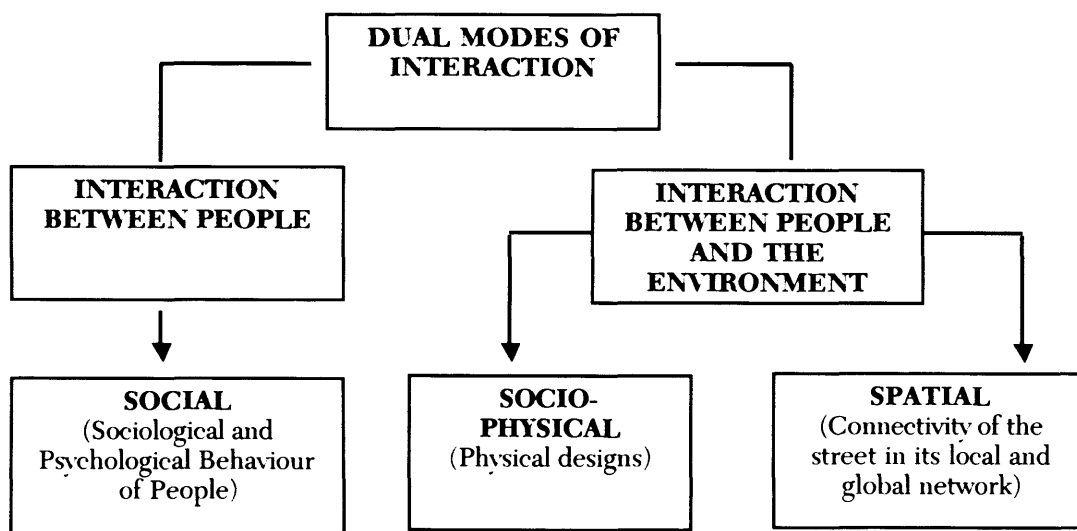


Figure 2.1. Schematic diagram showing how the dual mode of interaction between people and people with the environment is perceived through social, socio-physical, and spatial processes.

In principal, the study of sociology concerns the 'science of society'. Sociological and psychological studies deal with the social interactions of people and their consequences. This has made human beings (who include experts, ideologists, philosophers, theorists and all other professionals concerned with the built environment) committed to understanding the social life of society (Douglas 1974). Such professionals would need to be aware of the behavioural conduct of the people who make up society itself in executing their day-to-day activities. Dealing with the subject of people and social interaction in streets requires these professionals to treat

people as objects. This is to subject people to a physical process, by sociologists as well as psychologists.

This section reveals how streets could be perceived as 'place(s) of interaction'. It examines how the interaction amongst people and of people and the environment could be comprehended in the general behaviour and activities of people in streets. Figure 2.1 schematically illustrates how these interactions are examined. It relates interaction to sociology, psychology, architecture, urban design, planning, and urban geography studies. The examination is divided into two parts. The first characterises the process of interaction between people. This interaction is posited as the social process that occurs due to the sociological and psychological activities of people in streets, and how they communicate verbally and non-verbally in a particular situation. The second part notes how people execute their activities and interact with two aspects of the environment. The first relates physical design to the socio-physical process of interaction in streets. The second deals with the spatial configuration of the street, which brings out the spatial process of interaction within the local network of streets in the urban environment. The socio-physical and spatial aspects of interaction demonstrate how people and the environment 'communicate non-verbally'.

### **2.1.1. Interaction between People**

Sociologists, social theorists, and psychologists believe that human activities are the 'by-products' of people's verbal and non-verbal communicative conduct (Hall 1959, Argyle 1969, Sommer 1969). The sociological interpretations of the everyday life of people manifest a broad understanding of both static and dynamic (walking) activities of people in streets. This raises the question of how the random activities of people could be explained through their behavioural influences on one another.

Dealing with an almost neglected area of social reality, the behaviour of people in public and semi-public places, Goffman's *The Presentation of Self in Everyday Life* (1959) and *Behaviour in Public Places* (1963), shaped the ideology of a micro-sociology constituting the 'structure of interaction routines' of people within small settings of public life. Streets are addressed as one of these settings and the routines of people's social behaviour observed. Goffman's studies were specifically concerned with the conduct of individuals by virtue of their presence among others, though only

a segment of this conduct is considered. In this context, the general or formal properties of social action are analysed. Goffman argued that social relations exist due to individuals' familiarity with each other (amongst friends, familiars or co-workers) or its absence (amongst visitors, tourists, customers and retailers or waiters in restaurant) (see also Bauman 1990, Gidden 1990). This captures the behavioural relationships between people behaving and interacting with one another resulting from formal and informal everyday activities.

Goffman (1963) associated the above social relation in the face to face interaction between people with the idea of people as co-presence. However, the full conditions of copresence are found less in variable circumstances, Goffman noted that:

*' persons must sense that they are close enough to be perceived in whatever they are doing, including their experiencing of others, and close enough to be perceived in this sensing of being perceived.... On public streets (and in other relatively unobstructed places) the region of space in which mutual presence can be said to prevail cannot be clearly drawn, since persons who are present at different points along the street may be able to observe, and be observed by, a slightly different set of others (p. 17).'*

The face-to-face interaction developed from non-verbal communication such as gazing, watching, etc; reflect the above notion of the communicative behaviour of people who are immediately in each other's presence. This behaviour is considered in two ways. The first deals with *unfocused interaction – that is – the kind of communication that occurs when one gleans information about another person present by glancing at him, if only momentarily, as he passes into and then out of one's view* (ibid. p. 24). There is an indirect communication between people in these conducts. This type of interaction simply deals with co-presence.

The second deals with *'focussed interaction, the kind of interaction that occurs when persons gather close together and openly co-operate to sustain a single focus of attention, typically by taking turns in talking* (ibid. p. 24). In this behavioural conduct, there is a direct contact of communication, a direct interaction between people.

These two outstanding concepts of focused and unfocused interaction are represented by some dramaturgical scenarios of verbal and non-verbal communication, dealing with people's action and behaviour with one another in public. Nevertheless, since then, the recent sociological micro examination of public life has not further developed a set of innovative and powerful concepts as were evident in Goffman's classic work. Ritzer (2000), as quoted at the beginning, further claimed that,

*The analysis of behaviour in public places, while it has not entirely disappeared, remains a small field, perhaps because of the perceived "triviality barriers" (p. 479)*

This marks the origin of the problem of how urban design practice has been unable to fully recognise such important relationships missing from the aspect of designing streets for urban life. Clearly, interaction between people in streets must be revealed within their particular social relations with one another.

Focused and unfocused interaction could be made more 'visible' and comprehensible by perceiving interaction between people. Episodes could then be used as 'influential factors' which induce (or stimulate) social relations to occur. This aspect of sociology might suggest the direction in which one could observe and understand the action and reaction of people to one another in conducting their activities in streets.

### **2.1.2. Interaction between People and the Environment**

Studies of 'environmental psychology' devolving from the work of psychologists like Robert Sommer (1969) and many others address social interaction specifically within the context of non-verbal communication between people and the environment. Such studies assume that perceived interaction can be extracted from relations between people and the environment. These are observed through people conducting their everyday activities. Architecturally, these have been neither sufficiently explored nor empirically analysed (Lawson 2001).

Environment-Behaviour Studies (EBS), as described by Goffman, Rapoport and many others in the 1970s, established various techniques of analyses dealing with non-verbal communication between people and the environment. They are distinct from those carried out by sociologists and psychologists (Rapoport 1976, 1990). The studies

postulated how people behaved and used urban spaces in carrying out their everyday activities, depending on how they perceived the environment. The concept of cognition (mental mapping of familiarity with the environment) in the movement activities of people in streets was one of the techniques developed. It analysed how people chose their individual route path (Hill 1984, Rapoport 1976, 1990). Almost occupying the same position as these studies, a recent work by Dijkstra (2005) analysed the perceptual field of consumers in shopping streets in the Netherlands.

Rapoport (1976) suggested the space to be 'emitting a language' those people or users see as information and will then decode according to their needs. Rapoport argued that 'when space is encoded', people see it as information 'encoding' (p.3). People act according to their reading of the environmental cues and thus the "language" must be understood. If the design of the environment is seen as a process of *encoding* information, then the user can be seen as *decoding* it. If the code is not shared, thus not understood, then the environment does not communicate (ibid. p. 5, see also Rapoport 1983 and section 2.6.3 of this chapter). Through this non-verbal communication between people (in the form of people's activities) and the environment (space, places, habitat, sites, buildings, physical designs, habitat, streets, physical objects, etc), Rapoport (1976) continued to argue that there is a 'direct' and an 'indirect' interaction occurring between people and the environment.

Environment could include those tangible 'physical settings' where people would normally be observed. A direct interaction is established when people use 'spaces' or 'physical settings', which are designed for particular purposes. In contrast, an indirect interaction becomes evident when people do not use these settings according to their function. It means that (an) indirect interaction occurs when people's activities appropriate the physical settings, which might have designed or non-designed properties, when they are not specifically intended for people's use. These direct and indirect interactions of people and the environment are reciprocal. It means that people's behaviour and activities could shape and be shaped by the environment.

This aspect of communication, as observed in direct and indirect interaction between people and the environment, inherently includes both the formal and informal, static and dynamic, activities of people encountering each other in making use of the



environment. However, these are still insufficiently dealt with in the design of streets for people. Anderson (1986) argued that

*The problem of physical planning in general, and of the design of streets in particular, is to recognise the nature and limits of the interaction of people with their environment - not the polar conditions of presumed total irrelevance or absolute physical determinism. The physical environment must be seen as both a cultural system entailing the scope and qualifications of our aspirations and our resignation and a support system for our literal needs and actions - even if the interaction among these factors can only be partially distinguished for analytic purposes (p. vii)*

For a long time now Anderson's particular observation has provoked insight amongst various practitioners in the field of the built environment. Until today, these practitioners have struggled with the theory that designing streets for people should focus not only on the interaction between people and the environment but also between people and each other. Though the important 'ecological' entirety of streets is addressed within the socio-physical environmental context, still Anderson has not been able to objectively clarify the ecological relationship between the activities of people and the structure of interaction embedded within them (see chapter 3).

Moreover, the term "interaction" itself is a phenomenon. Various studies have been conducted to describe and explain it. Nonetheless, no objective explanation has been given to the structure and order of elements that constitute the existence of interaction in streets. Clearly, its existence could be perceived or experienced, as opposed to an object, as it intrinsically exists within itself. Interaction is perceptible to the senses rather than the mind, and so it thus has an apparent external existence.

Explaining the existence of interaction could be as difficult as explaining 'modernity'. There are many layers of existences which can be encapsulated by interaction. Many theoretical analyses have been offered, but there is still no solution (Dear and Flusty 2002, Strohmayer 2000). Seemingly, much of the analysis made on the elementary elements, which constitute interaction, has been based on imprecise ideas, and unjustified extrapolations. What has to be questioned primarily is whether the term 'interaction' is appropriate for describing a few social scenarios. Does this description

not rather designate the metamorphosis of the entire 'environment', that is of the interrelationships of various processes and implications in the natural surroundings, and consequently one's conception of existence?

Geographically, interaction transferred through space is complicated by the various 'relations' through which it takes place. Dear and Flusty (2002) believed that many levels and scales of processes of interaction are distilled or crystallised into a single locale or place; it is as though a multi-tiered sequence of determined events have been focussed into a single pane. Any locale or place is, therefore, at once a complex synthesis of objects, patterns, and processes derived from a simultaneous interaction of different levels of process operating at varying levels of the environment. The same context of complexity is conceivable and thus applicable to the various implications of objects, patterns, and processes within the different aspects of interaction in streets. Seemingly, the significance of interaction and human activities in streets reinforces not only the difficulty but also the potential of their social, socio-physical, and spatial examinations.

Though these studies on people's activities bring out their social and socio-physical implications, they seem to focus on the local condition of the particular streets. In understanding the random distributions of people's activities going on coincidentally, these distributions should also be examined within the local and global network of streets in urban space. Moudon (1987) argued that

*Street space can be conceptualized in two ways, either as individual streets ... or as networks of streets that irrigate the city and its different parts. To consider streets as individual spaces is to think of the characteristics of the space that links urban activities. The perception of streets as networks, on the other hand, leads to an understanding of their temporal dimensions, linking urban activities in time as well as in space (p. 13).*

This raises the question of whether the above studies of interaction in streets provide evidence of existence at different geographical locations or scales of places occur within the same time and space. This is the crucial and ongoing question debated by geographers, sociologists, and urban planners (Taylor 1998, Giddens 1990). It specifically asks whether the earlier theoretical aspects of focused and unfocused

interaction in people's activities could be accommodated within the spatial environment, which would implicate the spatial relation between people and the local and global aspects of the environment.

Conventionally, studies in human geography and the planning fields are much orientated to the social and economic condition of cities (Erskine 1976, Golledge and Stimson 1997, Taylor 1998, Thrift 2000, Pacione 2001). Many of these studies posited the question of interaction in relation to the social and economic conditions of society as if they were integrated with human activities. The subject of society subsumes the term 'interaction', which seemed to be purely ideological, a depiction of the everyday routines of society. Such studies do not deal with interaction objectively.

However, the Space Syntax study to appear comes close to explaining interaction more objectively. The science of analysing the spatial structure of the environment has developed a *theory of natural movement*, cited by Hillier et al (1992). The technique is referred to as space syntax methodology (see chapters 1 and 4). The term space syntax encompasses a set of theories and techniques for the analysis of spatial configurations. Originally, space syntax technique was conceived by Bill Hillier, Julianne Hanson, and colleagues at The Bartlett, University College London, in the late 1970s to early 1980s, as a tool to help architects simulate the likely effects of their designs. The general idea was that spaces could be broken down into components, analysed as networks of choices, and then represented as maps and graphs that describe the relative connectivity and integration of those spaces. It rests on three basic conceptions of space. The first is convex space, an occupiable void where, if imagined as a wire frame diagram, no line between two of its points goes outside its perimeter. The second is axial space, a straight sight line, and possible path. Finally, there is an 'isovist', or shared view, the field of view from any particular point. Space is given value with reference to these conceptions (Hillier 1984, 2000, Hillier and Hanson 1984).

According to space syntax theory, the theoretical implication of interaction is predominantly associated with the empirical aspects of people's dynamic activities and the level of connectivity of a space to another space in the urban grid. These dynamic activities are mostly directed to movement (as applied to walking activities). The studies integrate the social, economic conditions of cities with other surrounding

urban elements in the formation of people's occupation of urban spaces. By focussing on walking, space syntax theory refers Goffman's theoretical idea of 'social encounters' to social dynamics within the environment in the way people naturally move in cities.

Hillier's investigation on how activities are manifested in the spatial environment was a breakthrough in the field of architecture and urban design. Stressing his theory 'Cities of Movement Economies', Hillier (1996) argued that the natural movement of people in the configuration of the urban space affects social economic processes. This is unlike the convention of measuring the economic aspects of society, whereby variables in the cost of living etc, are readily available for analysis. Nevertheless, typical studies in space syntax theory are still restricted to people's walking activities. Aspects of people's static activities in streets have not been intricately dealt with (Hillier 1984, Campos 2002, 2005).

Many of the above studies on the spatial environment have barely managed to demonstrate the wide global implication of interaction with the environment. Many of the explicit details of people's activities in local spaces are not included. Dealing with the interaction of people in streets would naturally involve their social, socio-physical, and spatial interactions in the environment (Gehl 2000, Whyte 1980, Rapport 1976, 1990, Hillier 1984, Lawson 2001). In designing streets for people, most urban design studies have not developed the potential for providing a synthesis of such interactions of people and their activities. Such a synthesis could enable a holistic understanding of the relationship or interplay of the micro and macro layers of the structure of interaction routine of people in streets. Potentially, this could help guide frequently unsuccessful conventional urban design approaches to make streets lively for people.

## **2.2. URBAN DESIGN INTERPRETATIONS OF STREETS FOR PEOPLE**

The 1970s marked the beginning of a new era of urban design. It was when the newly recognised professionals called urban designers became more interested in improving and increasing the use of the 'public realm' for people. 'Public realm' is the usual term applied to certain research or commercial purposes in the architecture, planning

and urban design fields. In its simple form, the term 'public realm' can be used interchangeably with urban spaces consisting of squares, plazas, and streets in cities (or urban) and rural areas (Punter 1996, Moughtin 1992, Marshall 2001, Carmona et al, 2003).

Postmodernism theorists perceive that streets should be broken into pieces, in accordance with their function, where reflections of the urban 'structure' can be experienced through them (Crouch 1998, Levy 1998). Modern planners are aware of the effect of streets, which make up over three-quarters of public space in urban areas, on people's lives ([www.dft.gov.uk/stellent/2004](http://www.dft.gov.uk/stellent/2004), The Institute of Engineering 2002). This effectively requires planners to understand the fundamental role of the street within the context of its use as a public realm.

The development and management of measuring the success of streets for people would essentially have a huge impact on the policies which are imposed on them (DOE 1994, 1996, ODPM 2002, DfT 2007). Naturally, the application of a people-based approach to designing streets for the public would need to relate their practical function to people's everyday activities. However, the nature of rich urban culture and activities has meant the urban environment cannot be understood comprehensively (Holahan 1978, Benarjee & Loukaitous 1999, During 1993). Yet, it is still possible by identifying the elements of urban design and defining the domain of urban design practice.

### **2.2.1. Urban Design Manifesto**

In the early days, Gehl (1975) advocated that urban design as a discipline should mediate between the human and social sciences and planning and other environmental disciplines on the one hand and architecture on the other. Urban design has also been practiced as part of the planning process that deals with the social and physical (socio-physical) qualities of the environment (Anderson et. al 1986, Moughtin 1992, Madanipour 1996). That is to say, the design process would need to include, first the social, and second the physical dimension of the environment. Recently, the third, the spatial dimension, has also been much emphasised and compelled consideration in urban design practices (Hillier 1996, Dear & Flusty 2002, Carmona et al 2003).

In leading the urban design profession, Appleyard and Jacobs (1987), in 'Urban Design Manifesto', argued that good quality urban life is about creating a liveable urban environment. Punter (1996) added that good urban design could help make a place more accessible, more vital, more interesting, and more sustainable. Other related themes to urban design, as in the phenomenology and urban morphology fields, which are centred on understanding human immersion in the world, continually search for the underlying process that makes places and spaces lively for people (Seamon 1994, Gauthier 2005).

Through the intrinsic transformations of cities, urban design itself carries the complex relationship of the urban variables in the environment, whether on the local or on the global scale of the city (Benarjee 2002). On a larger scale, sustainable development, community interests, safety, a healthy environment, etc, can contribute to the complexity of the urban environment (Jacobs 1965). On a local scale, some of these factors underlie the conflicts in the use of streets for people. These could include large and small-scale neighbourhoods, business areas, crowds of people, or the very minute scale of an individual's 'personal space' (Sommer 1969, Fisher 1976, 2000).

The design management of urban and street spaces for people has suffered from such conflicts (Appleyard 1987). Such positions are inevitable in the growth of the urban environment because of the different technical language used by the client, different outlooks on cost and aesthetics between designers and traffic engineers, and the different needs and demands of tenant society with regards to community interest (Appleyard 1981, Moudon 1984, Crown Estate 1997, DOE 1996, see also DOE 1983).

Some said that the key purposes in urban design principles would inherently require relating the central values of urban life to the goal and objective as set in the field. This is about addressing the relationships of people from different groups, hence promoting social interaction in the environment (Gruen 1964, Gehl 1975, Whyte 1980, Winkel 1986, Tibbalds 1992, Cowan 1997).

The urban design field would therefore need to set the specific interests to reflect the profession. Its aim would then be to manage and design the built and unbuilt urban and street spaces (the public realm) in the interests of people.

One way of integrating their principles in designing public spaces is to provide a theoretical frame of reference, processes, and methods that will enable urban designers to maintain, preserve, and restore cities, towns, and villages in a desired manner. To use such a framework as a basis for this sort of upkeep of built areas, urban designers should first know the basic identity of the place. The derivation of such an identity could include the determination of the basic urban design and architectural structures and patterns, with their social and psychological, economic, functional, legal and other characteristics in their natural setting. In these complexities, designers would need to understand the intricacies of people's everyday activities that make up the richness of streets as 'places of interaction' (Tibbalds 1992, Gehl 1975, 1979, Whyte 1980). This naturally demands that urban designers be aware of the interrelated social, socio-physical, and spatial aspects of urban factors influencing the way people interact and compromise with one another in the environment of the street (Rapoport 1976, Kostof 1976, Anderson 1986, Appleyard 1987, Fischer 2000).

### **2.2.2. Urban Design Explorations of People in Streets**

A shift in the urban design paradigm to 'rethink' the role of streets as a public realm incorporating a functional dimension in their social uses would need to be adopted. This poses the question of how streets should be conceptualised and analysed for people (Moudon 1987). It resurrects the important issue in the urban design process: of defining and realising the social, socio-physical and spatial dimensions of the urban environment in making lively streets for people.

The street is renowned as playing a vital part in urban life. However, it cannot be denied that the particular role of streets in modern city life is for the use of pedestrians and traffic (Fyfe 1998, The Institute of Engineering 2002). Considering them in this way, the modernist vision of a 'streetless' urbanity combines the two aspects of the uses of streets, for both pedestrians and traffic. Though in the early 20<sup>th</sup> century Le Corbusier's prototypical design vertically segregated these uses, his methodology now seems rather obsolete. The changing pattern of the 'urbanite's' use of the street has made Corbusier's approach nothing if not unfriendly (Kostof 1992). Kostof also argued that,

*If, in the biography of the modern street, the Twenties and Thirties are the decades that condemned it to death, the Sixties and Seventies will be remembered as the decades of its attempted resurrection. For Western European the motivating force was a younger generation's anger at being cheated of their built patrimony, first by the insane vindictiveness of the war, and then by the equally vindictive zeal of a heavy handed Modernist reconstruction intent on suppressing the comfort and familiarity of the traditional streetscape' (ibid, p. 239)*

In the post-modern era, streets also raised another concern. Often, modern urbanism is a sterile environment that does not bring life to a city. As cited at the beginning of this chapter, architect Bernard Rudofsky (1969) advocated the notion of “Streets for People”, which criticised the modernist style of visioning people in streets in the early 1970s. Rudofsky compares the way streets have been used for people in western cities to the way they have been used in oriental cities. He claims that the western way of street design is disappointing and argues that his fellow professionals have not seriously considered how streets should be addressed in relation to their architectural design for people's use. A good illustration of the city life that Rudofsky admires is the daily ritual of city life. The function of this ritual is not just to move from one point to another, but to socialize, exercise, display oneself, and to engage in chance meetings of friends and other people.

In the context of this social function of a street, and projecting his architectural point of view, Rudofsky (1969) looks at specific features: canopies, bridges, stairs, mazes, pavements, and fountains. He was also pleased with the impact on people of the architectural building ornaments such as canopies attached to building facades or entrances in the streets of eastern cities. To Rudofsky, they serve an important function in making people use of streets efficiently. This example alone demonstrates how such a simple design element, which can be used for enhancing and enlivening the way people use streets, has been ignored in the streets of western cities. What Rudofsky observes are not theories, guesses, or fantasies, but street features and social practices that have a track record--extending in some cases back thousands of years--of how to make streets appealing for people and supportive of positive community relationships.



At a later stage in the post-modern era, Fyfe (1998) suggested that streets are increasingly more conceptualised as places 'made by people'. Though people extensively share the use of streets with the existing traffic, it is important to examine how people actually use streets other than as linkages which take them from A to B (see Lash & Friedman, 1982, see also Levitas 1986, Cowan 1998, Tibbalds 1992).

Crouch (1998) explores the significance of the street as an everyday site of geographical knowledge and leisure practice, revealing the rituals and relationships, practices and representations, which are played out routinely on the street. He points out that, in order to avoid introducing 'unintended' views into an urban space, development proposals must be evaluated at the street level or from the position of the pedestrian. He argues that the experience of a place is also dictated by the design of both streets and buildings. The three dimensional quality would reflect such an approach.

Interwoven into people's everyday experience of the site is an appropriate sense of scale, distance, proportion, massing, and landscaping and even architectural detailing. All of these contribute to the quality of space between buildings; i.e. the street's resemblance to the setting or the place of interaction. This quality is also a reflection of the interdependent combinations of urban variables, such as those of the architectural element, the height of the building, and most of all, the integration of traffic and the activities of people on the street (Moughtin 1992, Anderson et. al 1986, Relph 1996, Crouch 1998).

The above evidence also appeared in new scientific data of people collected by urban scientists and human geographers proving that both the social and physical characters of the environment exist within the local and global context of the city. The different geographical conditions of the street play an important role in defining the spatial manifestation of people in the city (Thrift 2000, Hillier 1993, Hillier and Netto 2000). They manifest the importance of the social, physical design, and the spatial aspects of people in the environment. These inherently account for those relations amongst people, people with space and space with space. Aspects of this new scientific urban design can be adopted, in which the functional dimension of city streets could be better theoretically and objectively comprehended.

In the classic transport field, Buchanan defined a street as: *a form of layout consisting of a carriageway for vehicles, flanking pavements for pedestrians, and with frontage development with direct access to premises for pedestrians and occasionally for vehicles* (Buchanan 1963, p. 222).

Buchanan concluded that, to deal with traffic in towns involves re-designing the physical arrangements of the streets and buildings. Streets would need to function as a pedestrian access to the adjacent premises located by them, and this could not be done without the regular vehicular function of streets.

The urban design consensus in promoting the design of streets includes the accommodation of people's various formal and informal everyday activities, such as sitting, standing and chatting (Gehl 1975, Whyte 1980, Rudofsky 1969). However, an empirical operational framework in dealing with such activities of people on the street has not been available. Though ensuring an efficient flow of pedestrians walking about in the city within the transport scheme, Buchanan (1963) did not indicate how the static activities of people could be given access to the premises along the street. This has influenced the inconsistent approaches and definitions adopted in urban design practice when incorporating people in the design of the street.

## **2.3. THEORIES OF STREETS**

The aforementioned urban design studies have emphasised the need to examine the underlying theories in designing streets for people. This section explores the theories which would be desirable as guides to the urban design methods of the promotion of the street for people.

### **2.3.1. Streets and Urban Culture**

Throughout its history, shopping has been a significant part of the cultural practice of city life. However, the ways shopping activities are practised and expressed are important for representing urban culture in western cities as distinctly different from the eastern methodology (Rudofsky 1969, Edensor 1998, Miller 2001).

Focussing on the different types of shopping activities that take place in streets, Edensor (1998) compares western society with India. He points out that, '*flaneur*'<sup>1</sup> is typified by wallowing in flux, observing the fleeting and the transitory, witnessing unique juxtapositions and incidental meetings (p. 217) (see figure 2.2).



Figure 2.2. 'Shopping culture' in India (source: Edensor 1998, p. 208)

Shopping also forms part of the leisure activities of people in cities. It is therefore important for urban design to consider what shopping experiences along the streets would exist side by side with people's other activities. As an important part of urban cultural practice, shopping must surely be treated as much more than just sheer moments of consumerism. This task challenges urban designers head-on. Streets would need to be designed and offer such leisure use, which would inherently include people sitting, browsing, chatting, etc. Levy (1998) reminded urban designers of the importance of designing streets in accordance with how people experience them rather than with how people move or walk from one place to another. According to Jacobs (1993), the best streets for shopping are the result of the design process criteria emphasising people and activities more than the physical dimension and the

<sup>1</sup> 'In its original conception, the figure of the flaneur is somewhat elitist, distanced from the crowd by his superior aesthetic sensibilities, a detached and self-contained poetic soul 'botanising on the asphalt' (Edensor 1998, p.217)

buildings that make the best streets for shopping. Even so, according to Jacobs, some happen to be more successful and functional for people and their activities.

Appleyard (1987), in pursuing his interests, advocated that a successful, objective street improvement programme would require a design process in which the interests and needs of all users could be articulated and incorporated into the final design. The vital factor that remained in most of the pedestrian-oriented streets was how to include the most complex activity patterns and user requirements of all common types of public spaces. This was crucial as the main street of a small community could result in a different type of activity pattern from the main shopping streets of a larger community (Owen 1987, Harrison 1987).

### **2.3.2. Sense of Human Experience In Street Spaces**

Urban designers generally believed that to assert the idea of humanising the streets would also mean to encourage the formal and informal existence of social interaction in the streets. Appleyard (1980) criticised the modern way of designing the streets and said that,

*Today cars not people are the biggest obstacles to good streets. Streets need to be safe for adults and children, for those who cycle and walk (p.303)*

Appleyard noted that pedestrians strolling about his neighbourhood represent one of the essential ingredients of urbanity and of a meaningful social existence. Naturally, this would increase the sense of human experience in the streets.

Whyte (1988) has also made a similar observation, referring to social existence and the density of people in the street on the basis of whether there exists a sense of gathering, or a sense of crowding in the area.

However, humanising streets, or facilitating social interaction, could also be expressed in physical terms that characterise a new urbanity in city planning and design. In this case, priority is given to the qualitative aspects of urban life, with a focus on increasing and improving urban activities within the environment (Pressman 1987). For instance, Winkel (1986) pointed out in the case of designing a park, *the question is not how people like the park to be, with various landscaping arrangements, but rather, how*

*people actually use the park* (p. 246). The physical settings that are normally found in the park, such as benches, steps and lamp posts, could be employed as relevant physical elements that will characterize the street spaces as the settings for people. Designers should be sensitive to the important implications of physical designs, which would consequently bring out the socio-physical aspects of streets, affecting their uses by people.

Additionally, Rapoport (1987) suggested that for the purpose of design, a valid theory on street-uses must be based on proper generalizations about environment-behaviour interaction. This depends on the definition that a researcher gives, which also depends on the purposes for which streets are used. He also suggested that for some purposes streets could be defined morphologically. Though they are insufficiently detailed, some attempts have been made to understand the morphology of urban space in relation to how people use streets (Gauthier 2005). From another perspective, streets may more usefully be designated as a setting for a particular set of activities (Rapoport 1980a). The thesis particular interest is to relate static pedestrian spaces to the morphology of streets in understanding environment-behaviour interaction more deeply. Such spaces would help integrate the morphology with the character of the street as settings for people's activities.

### **2.3.3. Sense of Place**



Figure 2.3 Sense of Place: 'Saqqara Pyramid' (Norberg-Schulz, 1980)

Christian Norberg-Shulz (1980) refers to the concept of 'Genius Loci'. He speaks of architecture as concretizing the nature of a place. He uses various examples such as the Saqqara pyramid and the Sea Ranch complex in California to demonstrate architecturally what he feels is the nature of the site (figure 2.3). He speaks of man-made places relating to nature in three evolutionary ways: firstly, in that man visualises his understanding of nature; secondly, in that man symbolises his understanding of nature; and finally, in that man creates a 'micro-cosmos' from his understanding of the world.

*Sense of Place becomes manifest at the level of the individual sense of place. It varies and is a product of a unique mixture of location, personal characteristics, circumstances, place-in-the-world and place in the social and economic order* (Eyles 1985, p. 137). 'Sense of place', or 'Genius Loci' is also referred to as the existence of human behaviour in relation to a physical setting, which is enduring and consistent over time and situation; therefore, the characteristic patterns of behaviour for that setting can be identified (French 1994, Parker 1994, Larkham 1996, Lester 1999, Norberg-Schulz 2000). In purely commercial terms, a sense of place is referred to as *pleasant surroundings translating into a variety of gains for both the resident and tourists* (Parker 1994, p. 196).

The authors above have briefly suggested that the process of creating a good sense of place could simply be the creation of a pleasant environment. However, Lynch (1984) in his 'Good City Form' stated that,

*Too often ill-defined and so passed over with a few pious regrets, this quality lies at the root of personal feelings about cities. It cannot be analyzed except as an interaction between person and place* (p. 131).

In 'The Image of the City', Lynch (1970) clearly indicated that a 'sense of place' is more appropriate to address interaction between people and the environment: Lynch suggested that a visual quality (e.g. a vista) in an urban space needed to be thoroughly explored by the city designer. This visual quality brings out the quality of the space on the street. It also leads to an issue raised by many designers, that of the ability of the street to function properly in accordance with its role, and the sense of place with regard to the comfort the street offers to its users. Sense of place emphasises people

in designing places. Paths, nodes, edges, districts, and landmarks are the five main theoretical (normative) tools advocated by Lynch. The concept of imageability that Lynch highlighted is a significant factor in creating a sense of city coherency. Therefore, increasing imageability would inherently increase the sense of place of an environment.

Part of the purpose of Lynch's tools of analysis is to create a sense of place aimed at streets functioning as a setting for people and their activities. However, these tools are purely theoretical and therefore could not be objectively or empirically applied. The lack of an empirical framework of analysis has meant that there are no scientific measures for recognising the existing interaction between people and their environment. People's activities need to be empirically, and thus objectively, understood in order to incorporate them into the process of designing a pleasant sense of place within the complex urban environment (Benarjee 2002).

Punter, (1996) claimed that urban design value, which is derived from concepts including imageability, legibility, genius loci, meaning, and symbolism, could be limited, unless it could be successfully articulated into policy and clearly justified. He also argued that objective design thinking is vital, as it can make a much more profound and positive contribution to both urban regeneration and urban expansion in relation to how people's activities might be addressed in the public realm.

Gordon Cullen, in *Townscape* (1961), highlighted the mental stimulation derived from the sequential experience of moving through a series of spaces. This stimulation arises as the awareness of people in their environment could be expressed visually or emotionally. In doing so, *the human being, he believed, is constantly aware of his position in the environment, and he feels the need for a sense of place and this sense of identity is coupled with an awareness of elsewhere* (ibid., p. 35).

Cullen is clearly aware of the existence of interaction between people and the environment. However, the way this issue has been addressed is still rather broad. It demands clarification of how the positions of people in the environment could be understood and recognised objectively.

Goodey (1978) describes six major characteristics that mark out the urban design process as complementary to architecture and planning. They are *the spatial scale, the time scale, man-environment relations, multi-client, multi-professional, and guidance*. The 'spatial scale' specifically implies the space between buildings. This fundamental quality generates the character of the street spaces. Space between buildings has become a focus of attention and he emphasised that,

*The space between the buildings is the scale of environment in which people find their daily activities and their strongest emotions with regard to change. It is the scale for urban design activity (ibid. p. 178).*

Evidently, these authors had long foreseen the idea of a 'people-environment' relationship in street spaces. This relationship could be analysed through observing the behaviour of people in conducting their everyday activities in the streets.

#### **2.3.4. Street as a Locus of Communication**

In dealing with the spatial environment of the street, Czarnowski (1986) considered the street as the locus of communication and significant for human interaction. Expanding this notion, Czarnowski drew attention to the range of communications existing on the street. For example, traffic lights are considered to be one of the functions of the street to restrict the pedestrian scale of communication. This, he argued, reflects the interaction process, which forms part of the streetscape. He believed that,

*It is the urban street that from the first origins of settlements has acted as principal place of public contact and public passage, a place of exchange of ideas, goods and services, a place of play and fight, of carnival and funeral, of protest and celebration (ibid., p. 207).*

Czarnowski added that,

*The street provides a classic example of the overlaying of functions: in its dual nature both a place of passage (path) and a place of gathering (activity node), although it frequently performs the tertiary task of storage as in the case of parking spaces (p.208).*



Czarnowski believed that there exist dual roles for the street of pedestrian and traffic use. However, he failed to provide a systematic operational framework for incorporating the relationship between these two 'street' roles. A systematic exploration of synthesising these two relationships in designing streets for people is necessary.

Levitas claimed that the lack of exploration of the relationships of the two roles of the street was due to intervention, which affects their use for social needs in a contemporary environment. She argued that, *increasingly, the street is recognised for its transit capabilities rather than for its ability to provide a setting for a range of rich and diversified human behaviours* (Levitas 1986, p. 232).

Wolf regards a street as a conduit and its main function is to transport movement and communication of people. He pointed out that,

*An urban street is a street in an urban place recognized as a "Main" street, and/or "The" street in which opportunity for a variety of communication, exchange, and interchange exists at a high level of intensity* (1986, p. 189).

Wolf claimed that this movement is based on traffic, similar to the recognition given by most transport engineers and planners. Streets in a contemporary society have been argued to function more than as just a channel for traffic. They can also function as a setting for people. One of the suggested criteria specified by Wolf is to address the intersection areas, where it is more likely that the pedestrian faces difficulty in terms of crossing the street, etc. The design treatment of intersection areas is crucial and needs to be given careful consideration, as a simple factor like this can bring out various social, socio-physical, and spatial implications. This could be useful in making streets more accessible (and perhaps more sociable) for pedestrians.

The sociological concern about the use of streets for the pedestrian has also elicited attention. Pedestrians are often faced with the difficulty of crossing streets not just at intersections and they often have to fight with traffic. By discouraging pedestrian interaction this has hindered streets from being sociable (see figure 2.4.) (Bennet and Watson 2002).



Figure 2.4. A sociological criticism of the violation of the sociability of streets. Such a violation has occurred when a pedestrian has had to face difficulty when having to 'fight' with traffic (picture taken from Bennet and Watson 2002, p.120).

Designers have also described streets as being accessible. Cowan (1997), expressed his idea of the street as that of a vital urban element which is essential in connecting people in isolated areas to one another. He pointed out that,

*Connections are what make successful cities* (p. 3).

Cowan argued that redeveloping derelict urban sites is an example where pressure on the countryside can be relieved and the rebuilding of a neighbourhood's social and economic life can be assisted. However, it will achieve neither if it is built as an isolated enclave. As part of the urban design agenda in the desirability of connecting places in cities, he went on to say, *individually we can do without cities, and people should have that choice. But, collectively, we cannot do without cities* (ibid. p.19). Cities also need to have internal connections. Streets can provide such connections, bringing people together from different parts. The subsequent movement pattern of people in the urban fabric can be studied.

Rykwert (1976) saw that the street is 'human movement institutionalized'. He went on to say that,

*As the path where people tend to follow one another, the road and the street are regarded as the social institutions, and it is their acceptance by the community that gives them their name and the function* (p.15).

The way to analyse streets as socially functional might be unclear in a modern urban environment. This is especially critical where any analysis (of streets) must include

traffic flow and its increasing volume resulting from urban growth. What has lagged behind is an understanding of the street as an essential carrier of communication, something deliberately created for that purpose and likely to continue in that role. The street is the most important component in the urban pattern, a pattern that is only apparent, learnt, and acknowledged from its use (ibid.).

Three implications of streets in relation to their uses for people may be identified from the theories discussed so far: social, socio-physical, and spatial. They enable the design of streets to be dealt with in a holistic manner. Along with these three important implications, two theoretical approaches to the role of streets have been emphasised: sociability and accessibility. Making streets lively for people also means making them accessible. This has created a theoretical complication arising from having to achieve a balance of people walking and also stopping to sit, chat or watch, etc.

## **2.4. CONTEMPORARY APPROACHES TO PEDESTRIAN PROVISION**

This section elaborates on the provisions of the practical use of the street for people. It examines the traditional and contemporary approaches adopted in designing streets for people. The following three important measures are elaborated on: firstly, the diversity of uses; secondly, pedestrianised streets; and finally, shared uses of streets.

### **2.4.1. Diversity of Uses**

Diversity of uses has been one of the most important measures, concepts, and approaches encouraged by local authorities so as to promote the use of streets for people's activities. Mixing the land uses in urban streets with residential, commercial and retail use has been one of the ways local authorities have tried to bring people back to urban areas (Jones et. al, 2007). In dealing with this issue, Punter (1996) suggested that public policy should be focussing on the spaces between buildings, the vitality of the space, people's comfort and safety and should also encourage lively ground floor uses, mixed retail uses, access controls, traffic calming, hard and soft landscapes, lighting and public art. The inherent intention here is to create a lively urban space, by providing different types of building usages (DOE 1996). However, this may not apply comprehensively to other streets with the same uses.

Jacobs (1965, p. 164) stated that,

*'On successful streets, people must appear at different times.'*

Inevitably, the use of streets by people is the main subject of her interest and criticism. People's activities when they are static should also be recognised for the potential to generate a diversity of activities on the street. Within this diversity, Jacobs is concerned with ensuring the safety of the streets for people. In dealing with this issue, Jacobs encouraged mixed land uses with retail and residential use. By adopting this method, the frequent presence of people both guarantees safety and the success or liveliness of the street.

Jacobs saw that the foundation for a vital street life as diversity – a lively mix of land uses and building types that supports and relies on a dense, varied population of users and activities. She believed that integral to diversity and lively streets are particular qualities of the physical city – for example, doors directly opening onto the street, small walkable blocks, and the opportunity for pedestrians to turn corners frequently (ibid.). However, no systematic corrective measures were implemented, as her approaches were mainly theoretical. This has meant that the argument she presented in clarifying the diversity of uses is highly problematic. Few planners in Britain would accept these bold statements. Many have found it necessary to approach the question of diversity in a spirit of compromise when they recognise that the principle of diversity of land uses with all its social advantages must be in conflict with the demands set by high standards of quiet, safety, sunlight, etc, where some separation of incompatible activities and building types is called for.

Focussing on this diverse use of the street, Francis (1987) claimed that,

*A lively and successful street demands a balanced mix of different user groups and activities* (p. 29).

Francis believed that streets are the basic building blocks of democracy and their uses should predominantly be for the public benefit (ibid). However, the issue seems to be very broadly discussed. It looks like Francis's own idiosyncratic argument to expand the democratic use of the streets.

Inevitably, due to the complexity of the urban condition, to resolve the problem of the decline of people's use of the streets requires more than just a theoretical approach. It also requires an empirical and analytical approach in which the relations of urban properties to one another might be systematically understood. In support of this, Levitas (1986) pointed out that,

*No general rules about human spatial behaviour have emerged to provide guidelines for design; this failure in turn stems from the lack of a concept that would order the data and facilitate useful generalizations (p. 225).*

More practical than Levitas, Appleyard (1987) noted that, in order to bring back street life by promoting the diverse use of land, it is not enough to limit the street within confined walls; it also requires planning control. The existence of the cafe suggests the importance of everyday activities such as eating and drinking in enhancing social life on the street. However, in western cities such activities have been controlled within confined walls (such as in malls and big department stores) (Rudofsky 1969).

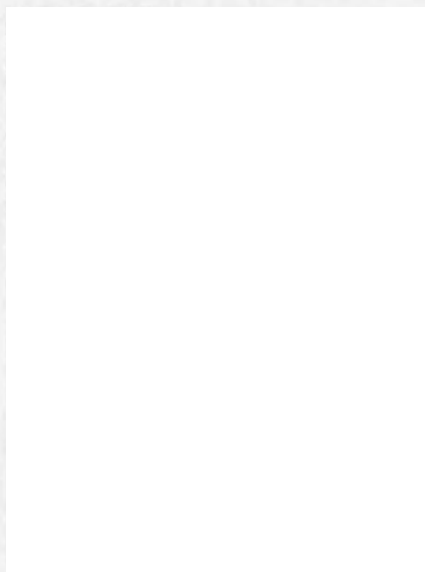


Figure 2.5. A seasonal market takes place on the streets. People performing static activities are the driving force underlying these commercial activities. The picture also demonstrates a type of activity of people which reflects their diverse social needs. This imposes different demands for the use of the street other than the traffic (source: Moudon et. al p. 340)

Figure 2.5 shows an example of the seasonal street market as found in western cities. The diverse uses of streets, which promote human social life, can also be seen in market settings. This type of setting can sometimes result in physicians, barbers, and food vendors anchoring and selling their wares in the street space. This is traditionally (and still, now) apparent in oriental cities (Levitas 1986, Edensor 1998). Yet their presence in streets in western cities is still very restricted and controlled. The significant impact of these activities, which lend a lively

quality to the street, could have the effect of prescribing planning control so as to improve the lively quality of street-life.

#### 2.4.2. Pedestrian Streets



Figure 2.6. 'Pedestrian Malls' (source; Stewart 1979, p.HR11)

The next important measure to discuss is related to transport planning. 'Pedestrian Malls' (figure 2.6) is the earliest measure implemented intended to improve the design quality of streets for people. The purpose of the mall is to enhance the economic base of the city by stimulating trade and thus protecting or increasing commercial property values while affording the highest reasonable measure of convenience and comfort to shoppers (Institute of Traffic Engineers 1966, Richards1974, Stewart 1979).

Some measures may separate vehicles from pedestrians so as to ensure pedestrian safety on the street (Schumacher 1986). Other measures primarily consider a total elimination of traffic in streets. The complete removal of traffic is implemented in order to expand the pavement for pedestrian use. The expansion of the pavement is carried through to the full width of the street between building facades so that kerbed edges no longer exist (Richard 1974). This is done in order to increase the ease of access for moving people, which would also raise the level of movement. However, having a wide pavement does not necessarily encourage other kinds of activities, such as sitting or standing. In streets where traffic is not eliminated, some potential activities on the widened pavement may even be controlled and regulated by planning policies (Appleyard 1988). Thus, these measures may or may not support static activities, but may only improve ease of access for the flow of pedestrians into the area.

It is therefore argued that a total elimination of traffic does not ensure the liveliness of streets as some of these streets can even end up abandoned, especially at night (Haas Klau 1999). Pedestrianised streets do not ensure the liveability of streets within their context of uses for pedestrian static activities.

#### **2.4.3. The Shared Uses of Streets**

The shared uses of streets developed to meet the needs of people in suburban areas. Other developments related to transport planning later introduced the concept of shared use of street spaces between pedestrians and traffic. The 'shared streets' concept treats the needs of car drivers as secondary to the needs of users of the street as a whole (Appleyard 1980). This is different from the normal convention in the design of urban streets, which have been criticised for losing their original character, their social function, and for not providing facilities for weaker road participants. In response to such criticism, the design of the shared use of streets is predominantly guided by the safety of adults and children.

Appleyard believed that streets must also function as part of the symbolic environment, epitomizing the community sense of place and expressing collective territoriality. The quality of life is seen as dependent on its surroundings, and that includes among other things the quality of streets. Street spaces are to be designed and shared by pedestrians, playing children, cyclists, and low-speed motor vehicles. Such measures are conceptualized as 'woonerf' in the Netherlands, 'traffic calming' in Europe and the United States and 'home zones' in the United Kingdom.

Over the ensuing years, such a concept, of sharing the use of streets between pedestrians and traffic, has become the basis of the work of various authors. It has led to European countries and America having to promote the theory of 'traffic calming' as a way to tackle the problem of public safety on busy streets (Haas Klau 1990, Crawford 2000, Engwicht 2002). Some non-governmental private institutions, The Urban Design Alliance (UDAL) have released manuals on 'The 2002 Designing Streets for People', which show how to manage people and traffic and people in streets (The Institution of Civil Engineers, 2002). It was later transformed into a proposal which combined public transport and pedestrians as a new way to look at the issue of 'pedestrianisation'.

Traffic calming street designs abounded in pre-war U.S. cities, including New York City, before newer auto-centric cities became common. Traffic calming assumes that streets are valuable public space and should be shared equally by all users. It introduced a set of street designs and traffic rules that slowed and reduced traffic, whilst encouraging walkers and cyclists to share the street. Traffic calming methods include: speed humps, raised crosswalks and intersections, extended and widened sidewalks; mini-roundabouts, widened medians; cycle-lanes and rumble strips. Traffic calming measures like speed humps are easily modified to accommodate emergency vehicles, garbage trucks, and buses.



Figure 2.7 Official German traffic sign marking the beginning and end of Woonerf. Note how the sharing of street space by various users is depicted graphically (Pressman 1987, p.63).

European countries such as the Netherlands and Germany have also adopted such techniques. Traffic calming is the translation of the German word “verkehrsberuhigung”. The modern traffic calming movement began in Holland in the early 1970s. However, the idea has been around since the ancient Romans used stepping-stones to slow chariots at pedestrian-crossings. This technique was introduced in the Netherlands in the 1970s, and became famous all over Europe. It is called Woonerf; technique that involves the conversion of residential streets into pedestrian-dominated, collective spaces. In dealing with the issue of safety, one of the important concerns of the social aspects of the use of the street by people, it started with an analysis of children playing (Moudon 1987). Woonerf allows for both the sociability and accessibility aspects of streets. Pedestrians are not separated from traffic but instead share the use of the same street. Woonerf also manages the time of the flow of traffic and pedestrians. Figure 2.7 shows how the technique integrates car and pedestrian use in residential neighbourhoods (Pressman 1987, Haas-Klau 1990). The empirical findings in Woonerf support the theories maintaining that a



balanced diversity of use and users is needed for urban space to become truly public (Francis 1987). However, Woonerf does not reflect the intrinsic formal and informal static activities of people using the streets. Yet, it is crucial to design the physical layout to give access to people performing static activities. An empirical technique which could systematise the balance of use of the streets between traffic and static activities of people is still lacking. Thus, urban design practice still faces the challenge of balancing street use(s) for these two dominating activities.

Increasing street-use by pedestrians also means taking account of individual means of monitoring oneself in cities. This would inherently promote city streets to be accessible for people. Some extreme measures similar to this kind of approach promote the idea of car free cities. The car free city is said to save energy, preserve the environment, and improve the quality of modern urban life. By encouraging cycling and public transport, it offers a practical solution to the many urban problems caused by cars and trucks (Crawford 2002). This particular approach successfully addressed quite the accessibility conditions of the streets, allowing easy access for people into the city. However, such an approach has only briefly included the intricate use of the streets by the static activities of people, which would certainly enhance the sociability of streets. This shortcoming is related to the measure having lacked an empirical (objective) framework.

## **2.5. CITY STREETS: THE CONFLICTS**

This section investigates the physiology of the street whilst seeking to understand how it functions theoretically and practically according to the different demands of the street-users. Fundamentally, it investigates how modern development has affected the decline in the use of streets by people and their activities and thus caused a shortcoming in the provisions of giving people priority in using the street.

Appleyard (1987) noted that,

*Streets have always been the scenes of conflict. They are and have always been public property, but power over them is ambiguous, for the street has an open and easily changeable nature. Unlike buildings, with their defined activity areas and controlled entrances, the street is open to all (p. 9).*

A clear example of the above conflicts could be drawn from the situation of streets having to encounter changes in value and demand due to the growing social needs of society. For instance, a conflict may arise between an urban designer and a transport planner over the use of road hump material. A traffic engineer is concerned with the cost of the material, and more likely about the effect upon traffic, whilst an urban designer is concerned with the aesthetic value of the road hump (ibid.).

In reality, streets account for about 80% of public space in urban areas and provide the setting for billions of pounds worth of property (The Institute of Civil Engineers 2002). In maintaining such an important role in the urban fabric, streets are conduits for sewage, wastage, electricity, telecommunications, gas, clean water, and people. Streets also provide the focus for local communities when public gatherings are held in them. Streets are therefore required to be publicly (freely and democratically) accessible. Enabling them to be freely used by the public would transform their roles as meeting places from the conventions addressed by transport engineers (Francis 1987). It is therefore inevitable that the different forms of street-use motivate conflicts in the contemporary urban environment.

Such complex use might make it difficult to grasp the fundamental social intricacies involving all the activities of people and the way they relate to traffic on the street. Indeed, there is a need to find a balance between people's social needs and activities and the simultaneous growth of traffic (Appleyard 1987, The Institute of Engineering 2002). Naturally, this requires a detailed and empirical understanding of how the everyday activities of people take place in streets.

Many studies have demonstrated how people have limited use of streets (Moudon et al 1987, Minton 2007). The following issues are raised and are argued to have constrained the understanding of urban design practice in promoting the intricate use of streets by people. The first is urban growth, which has been a consequential adjunct to the rapid growth of traffic, which has also caused pollution, congestion, and impingement on the street space used by people. The growth of traffic compelled urban designers to address the balance in street use for both pedestrians and traffic. Secondly, there are the diverse social needs and demands of the street users. Such diversification of uses is argued to cause the failure of urban design methods to explain the various psychological and sociological implications of people's activities in

streets. The third issue is the privatisation of the public realm encroaching on the spaces used by people in the street. The building of shopping malls, office complexes and so on have limited the use of streets by people. Finally, some issues are put forward which criticise the planning and decision-making process for the strict controls and regulations they impose on the way people use streets. Such controls are argued to have failed to encourage activities, which could have brought liveliness to the streets.

### **2.5.1. Urban Growth**

Evidently, the increasing quantity of traffic has been the consequence of the growth of cities (Ritter 1964, Wolf 1986, Buchanan 1965, Hass Klau 1990, Bennet and Watson 2002). On this issue alone, urban designers are aware that the use of streets for people in conducting their everyday activities in the urban environment has declined. It has also emphasised the (increasing) need to accommodate the volume of traffic whilst ensuring its efficient flow through the city. It has particularly raised concern for people's safety (Living Streets 2000).

Increasingly, traffic has also become damaging to the environment, causing heavy pollution in cities (and global warming has been criticised as its most disturbing consequence). This has badly affected the health of people in cities (Buchanan 1963, Chick 1996).

The rising number of vehicles has also drawn attention to exacerbating street congestion as the car-use has drawn more people into the city. This has been the main factor in the change of the use of streets in urban areas. As time goes by, street congestion becomes more severe due to the narrow widths and constrictions of thoroughfares, on-street parking, the frequency of intersections, and the intrusion of traffic in pedestrian spaces.

The interdependency of urban functions (the dependency of social and economic growth amongst the populations, businesses, organisations, etc) has been specifically argued to lead to a growing demand in the use of streets. This symptom is familiar in the modern urban environment. Gold pointed out;

*Modernisation required that each street should be classified according to its function and busy thoroughfares isolated from nearby buildings. Further improvements would come from the creation of pedestrian lanes and restriction of on-street parking (Gold 1987, p. 50).*

In one form of separating use, such means as sign posted routes, sophisticated traffic control systems, traffic calming, parking strategies, park-and-ride schemes, the promotion of public transport, facilities for walking and cycling, traffic restrictions, and pedestrian schemes were adopted to manage the impact of visitors in cars and coaches (English Tourists Board 1997).

Traffic engineers have also adopted a simple trade-off pattern, which is apparent in the measurement of street capacity to accommodate space for traffic. For example, in central urban areas, of the 20% of ground use designated to roads, 12% is specified for the use of moving traffic, while another 8% is for parking spaces (Smeed 1963).

On the other hand, the government has also tried to create attractive and convenient urban areas through planning inputs in urban design, with particular schemes such as land use policy, housing, transport, culture, education, health, and finance (DOE 1996). Apparently, to relate these sorts of policies to the way streets are used has certainly challenged the planners. This is patently clear in the way they have provided approaches in accordance with the changing needs and uses of streets for the pedestrian.

However, planning inputs that take into account urban design purposes have been debated for some time. Michael Southworth refers to the interdisciplinary approach between street design and planning. He points out,

*Urban designers, planners, and engineers should work together to develop new and revised standards that are more adaptable and responsive to the diverse users of streets and to varied social and geographic settings (Southworth 1997, p.8).*

Buchanan (1965) narrowed down such complex uses of streets. He postulated that the conflict of urban factors would need to be identified from the design of the street

itself, which needed to focus on the conflict between accessibility and the environment. If through traffic could be removed altogether, it was suggested that steps would still be necessary to secure a satisfactory balance between accessibility and the environment. For instance, the positioning of rear-service-access to the shops would be extremely expensive, though it would enable the street itself to be used for pedestrians only.

However, some complexities remained unresolved as some of the standards used were still directed towards ensuring an efficient flow of traffic, though taking consideration of the other existing planning measures. Planning measures determining successful use mainly took account of the flow of pedestrians. Such measures are limited to people walking and they still need to be adapted to the diverse static activities of the pedestrians.

### **2.5.2. Diversification of Social Needs**

The way pedestrians use streets has changed due to modern life-styles and might include activities other than walking (Caliandro 1986, Moudon 1987, Fyfe 1998, Bianchini 1990, 2000, Bennett and Watson 2002).

Celik (1994) has suggested that the shortcoming in the failure of urban design practice to promote diverse social activities in streets is due to its inability to address the relationship between particular buildings and the outside environment. She commented that the exterior design and building materials did not reflect the uses of the upper floors or the personalities of the people who lived inside the buildings. This is due to the physical characteristic of the building façade, which does not imply anything about its use.

One of the latest sociological trends in the diverse social activities in urban streets is demonstrated by the concept of *Streetology* ([www.streetology.com](http://www.streetology.com)). Streetology reveals the behaviour of some groups of interests of the minor ethnic communities, such as the black African and Latin American people especially in the southern cities of California in the United States of America. Streetology reflects the living conditions, personal interests, and community spirit of people in the city. Some activities observed and documented by the reports published by these groups of

interests looked at people's behaviour such as watching, standing, 'getting confused', taking pictures, etc. It elaborates on the idea of how streets are and can be used for stimulating the social interaction and activities of people in the city. However, no systematic or empirical observations have been documented.

Architecturally, streets have often been gauged on their visual appearance and physical characteristics. Jacobs's (1993) *Great Streets* analysed and compared various eminent streets around the world, such as the Ramblas de Barcelona, Plaza de Catalunya, Strogets in Copenhagen, Regent Street in London, etc. For Jacobs, the variety in people's activities is essential for the success of these great streets. Nevertheless, many of Jacobs's opinions are highly personally coloured. His work seems to require further empirical research in order to understand people's activities more objectively.

The complex social use of urban streets involves the diverse needs of the residents, local workers, retailers, and the use of vehicles compel different objectives. Nevertheless, these different objectives of users are controlled either by the owner of a property or by the authorities, which thus complicates the design or management of the street into which the different social needs of people would be integrated. This prompts the question of whether planning control would have a positive or negative impact on potential activities (Southworth and Ben-Joseph 1998).

Appleyard (1980) saw one aspect of the above conflict in residential areas. He argued that; *The street environment should have places where people can sit, converse and play ... All streets have a history .. without undue nostalgia, a street's history could be recorded, were residents able to begin seeing it as a "place" rather than a "channel". Residential streets should be destinations, not routes* (p. 33-39).

Appleyard has clearly distinguished the opposite characteristics of streets in benefitting people and traffic. This provokes the question how the urban design process could enable the street to function as a 'place' for people.

In Germany, people's diverse needs were seen as having direct sociological and psychological impact. The success of traffic containment by way of traffic calming in the dense urban cores sparked a new movement: the restraint of traffic in residential

zones to protect the character of these areas. This approach also increased concern over environmental safety and related measures have been put into place reducing pollution emission. Traffic control devices are used to restrict the volume, speed, composition, and direction of traffic and even to limit access to residential sectors. They assume two forms. Passive psychological controls involving signs rely on obedience and enforcement. Physical controls, comprising obstacles such as diverters, cul-de-sacs, and barriers, are more effective and exert greater control over driver behaviour (Hass Klau 1990, 1999). These measures seem to have been able to incorporate the different social uses of the pedestrian (addressing the need for children, elderly people, etc) within the dominating use of the streets by traffic. Though they address the diverse needs of the users, these measures have still not sufficiently dealt with intrinsic everyday static activities.

### **2.5.3. Privatisation of the Public Realm**

What are the (specific) characteristics of the activities underlying this conflict? Anderson (1986) pointed out;

*Streets are integral parts of a movement and communication network: they are the places where many conflicts or resolutions between public and private claims are accessed or actually played out; they are the arenas where the boundaries of conventional and aberrant behaviour of people are frequently drawn. As an integral part of movement and communication networks within the city fabric, some properties form part of the process around it. Consequently, some parts of this movement could influence the main activities of people, which are very much dependent on the type of land uses available on the street. In which case, these land-uses are able to generate all forms of possible human activities taking place on the street (p.28).*

Such land-uses are then capable of influencing different demands and needs.

Though both public and private users could claim rights, streets are nevertheless pre-eminently public. Moudon et. al (1987) argued that when questioning streets about their specific uses, it is only natural to first ask whether they belong to the public. This is followed by the question whether streets are supposed to be for public use,

reflecting the conflicts that have arisen in modern living. This is because, in addition to designing the normal function of the street to accommodate the movement of people and traffic, streets also fill up the city, and they would simultaneously need to accommodate the various needs and demands of urban inhabitants. Simply put by Whyte (1988), *streets are the connections for the set of activities in urban life* (p.88).

Conflicts that arise in providing streets for people may also be due to design and planning factors which have hardened modern living in cities. In addition to the intricate variety of demands on users, the complexities are enhanced by the privatisation of the public realm, which has reinforced the decline in the social use of streets (Madanipour 1996, Poole 1995, Punter 1996, Minton 2006).

Peter Wolf (1986) argues that the aim of the *economic interaction* of an urban street is to secure the interest of public and private sectors. Such interaction is classified as joint development, investment partnership and airing rights, an example of mixed private and public sector policies in securing their interests on the street. Such schemes are not concerned with how people use streets. Inevitably, a sole interest in the economic investment would complicate the design of streets for city inhabitants. Every development (be it for commercial, retail, shopping, residential or general use) would surely require people to act upon in order to accomplish success. People's activities should therefore be treated as part of the economic investment and be incorporated in securing those interests in the development of the street.

Pedestrian uses of the public realm, the squares, plazas, and streets are often criticised. This is because many of these public spaces cannot be considered as public anymore if they fall under the management and use of private individuals and companies. This was evident when public streets were privatised with the arrival of shopping malls and mini malls in the United States (Francis, 1984).

Shopping mall industries, which were the result of the urban growth in the 1980s, are obvious problems and have caused changing patterns in the land use of urban streets. The growing development of these shopping malls and privately owned buildings has also limited the accessibility of streets to pedestrians. These commercial uses have led streets to emerge as parking spaces instead of places for people.



To Whyte (1988), the building of those malls and office blocks has caused the vacuum of spaces on streets to be filled with cars rather than people. This has restricted the use of space for potential social activities that may have suggested a better quality for the streets (ibid.). This restriction happens when some streets fall within the private boundary that limits pedestrian uses. Such a limitation becomes greater when there is a need to allocate the particular street space for traffic and pedestrian use. It is therefore fundamental to understand the allocation of the street space for the relevant activities of people in the existing traffic.

#### **2.5.4. Regulatory Streets**

*Streets are indeed a public property:* their uses are mainly within the public domain (Appleyard 1987, p.15).

As public property, the public sometimes uses streets less efficiently than they could be used, and for various reasons. The use of space and potential for human activities is controlled by the ambiguities of power and authority because this is laid down within the planning system and legislation. This interaction indirectly reflects their social value and the need of society (ibid.).

The availability of the car, bus and lorry in modern urban living has not only changed the pattern of transport but also social, economic and land use characteristics. Certain standards and principles can be applied in the development of car ownership. Planners need to be aware of these changes to create a policy that is able to look at or predict the changes beforehand (ibid.).

Bacon (1974) notes the above complication and replies,

*The building of cities is one of man's greatest achievements. The form of his city always has been and always will be a pitiless indicator of the state of his civilization. This form is determined by the multiplicity of decisions made by the people who live in it (p. 13).*

Bacon seems to suggest that decision-makers normally determine a particular development in cities. However, the policies prepared by the limited number of

these decision makers could create problems in conforming to the various user needs. Punter (1996) suggested that such decisions are hard to make due to the complex nature of the development and control processes and the different objectives of the multiplicity of actors involved.

Some devices control street activities by imposing too many regulated planning policies. This happens when the private owners (in replacing the local authority) can take their own initiative with the development. Though the initiative is subject to consent from local authorities, its policies normally ensure the development benefits the parties involved. Nevertheless, this does not necessarily happen in contemporary streets, whose use is controlled by consumer capitalist society (Edensor 1998).

Control and resistance focuses on how social life in streets is increasingly regulated, both directly by formal agencies of control, such as the police, and indirectly through architecture and urban design. The legal contests for development according to the regulations highlight the competing ideas of status. This is a conflicting interpretation of public space as it raises the argument of commercial versus community interest (Celik 1994). This further complicates the process of balancing the demands on the use of streets.

For example, the planning regulations imposed over shop front designs restrict the use of the pavement area of building frontages. However, the business needs of the tenants operating street cafes often require more use of the pavement. This operation may suggest an induction of extra activities on the street, which are thus capable of stimulating a more favourable *sense of place* in people. The presence of such activities would also enhance the space in between the buildings and satisfy the needs of the retail operators and people (Rudofsky 1969).

It could be suggested that control over the use of land can be explored more objectively, and more focus given to people's need of the street. For instance, providing facilities such as street benches, bus shelters, street lighting, and other related pedestrian facilities could make a difference to the success of the street (Jacobs 1993). These provisions may influence a certain type of human activity to take place in the area. However, providing pedestrian amenities may not be the only

solution for enhancing the 'liveability' of streets. The streets would also need to be accessible for people (Cowan 1998).

The issue of the physical appearance and visual qualities of the street evokes the need to analyse the planning system that works within it (Punter 1996). This is especially true in the case of the street that falls within a conservation area (Punter 1995, Parker 1996, Larkham 1996). The planning system involves a lot of control on the applications for the development of the area, and of the land uses of the space in between the buildings or along the street. Such controls restrict the public from using these spaces in the local or global contexts of the area.

Various pressures from street-users might have caused the above conflicts. The need to balance the use of streets to meet these demands would then seem critical. The question remains whether the potential to use streets socially has been objectively understood. What would be people's desired activities that would objectively represent the different users of the streets? The following section explains the practical and miscellaneous activities of people using the streets so that the conflict in use by static activities can be addressed objectively.

## **2.6. THE SYNTHESIS OF INTERACTION AND STATIC ACTIVITIES IN STREETS**

The studies discussed thus far suggest that insufficient understanding of pedestrian activities relates to the inability of design professionals to perceive the process of interaction taking place in the environment (Anderson et. al, 1986). Urban design practice has barely understood the many reasons for the varied concentration of people's static activities, which differently characterise the liveliness of streets. The innate aspects of how these static activities are affected by people, the physical design and the spatial environment of the streets have lacked theoretical and objectively detailed explanations. Yet, static activities play an important role in almost every street and alley and many public spaces such as the squares and plazas in city centres (Whyte 1980, Hillier 1984, Appleyard 1981, Gehl 1975, Cutini 2003). They enrich the urban fabric and should be recognised and explored as a micro-component in the process of returning a good quality of street life to people.

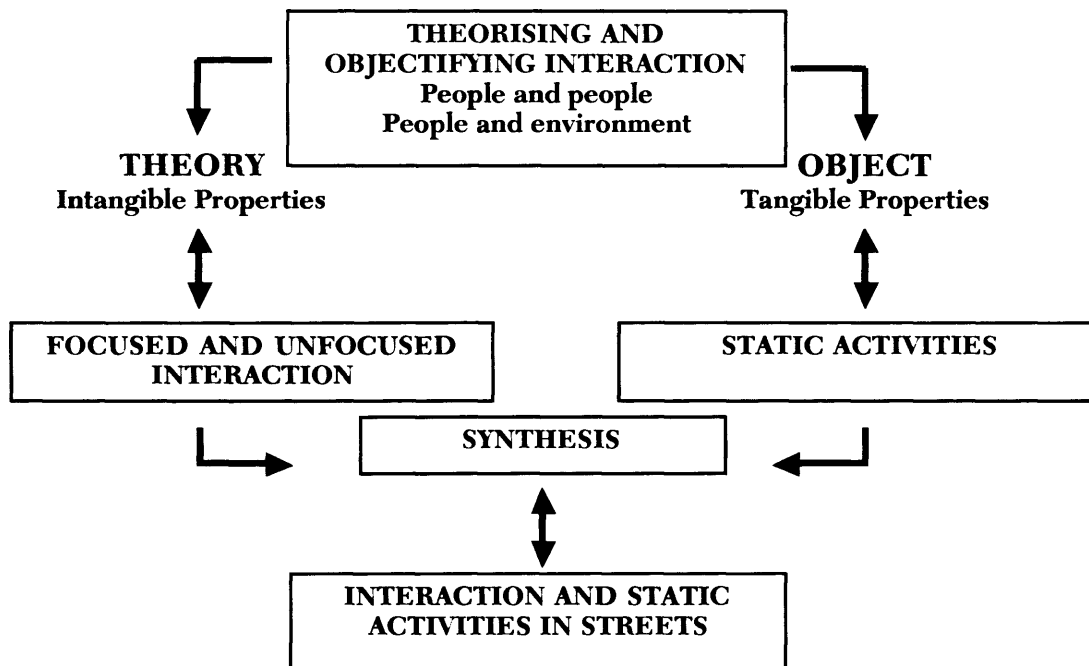


Figure 2.8. The Synthesis of Interaction and Static Activities

Indirectly, urban design practice associates the co-existence of static activities with the interaction between people, and between people and the street environment. This prompts the possibility of synthesising such coexistence in influencing the process of designing lively streets for people. This section describes the process of formulating the synthesis. It suggests that interaction would be better defined and represented by people's static rather than walking activities. This subsequently raises the issue of how the intermediary characteristics of static activities in the structure of interaction routine in people's everyday life could be specifically selected as the predominant theoretical and practical variable(s) in accounting for the social, socio-physical, and spatial characteristics of people in streets. Figure 2.8 schematically distinguishes the two components, the theory and object of the synthesis. The former focuses on the intangible properties of interaction, and the latter the tangible aspects of static activities.

### 2.6.1. Static Activities On Streets

Although the city is about the design and management of urban spaces, one outstanding study, 'The Streets Life Project', pioneered by Whyte in the 1970s, was also concerned with the life and rituals of people out on the street. Interestingly, Whyte discovered that at midday in some streets in New York, people mainly come

together for 'schmoozing' (i.e. chatting or talking). They schmooze about their daily 'formal' businesses, or simply on other 'informal' matters (Stein 1992).

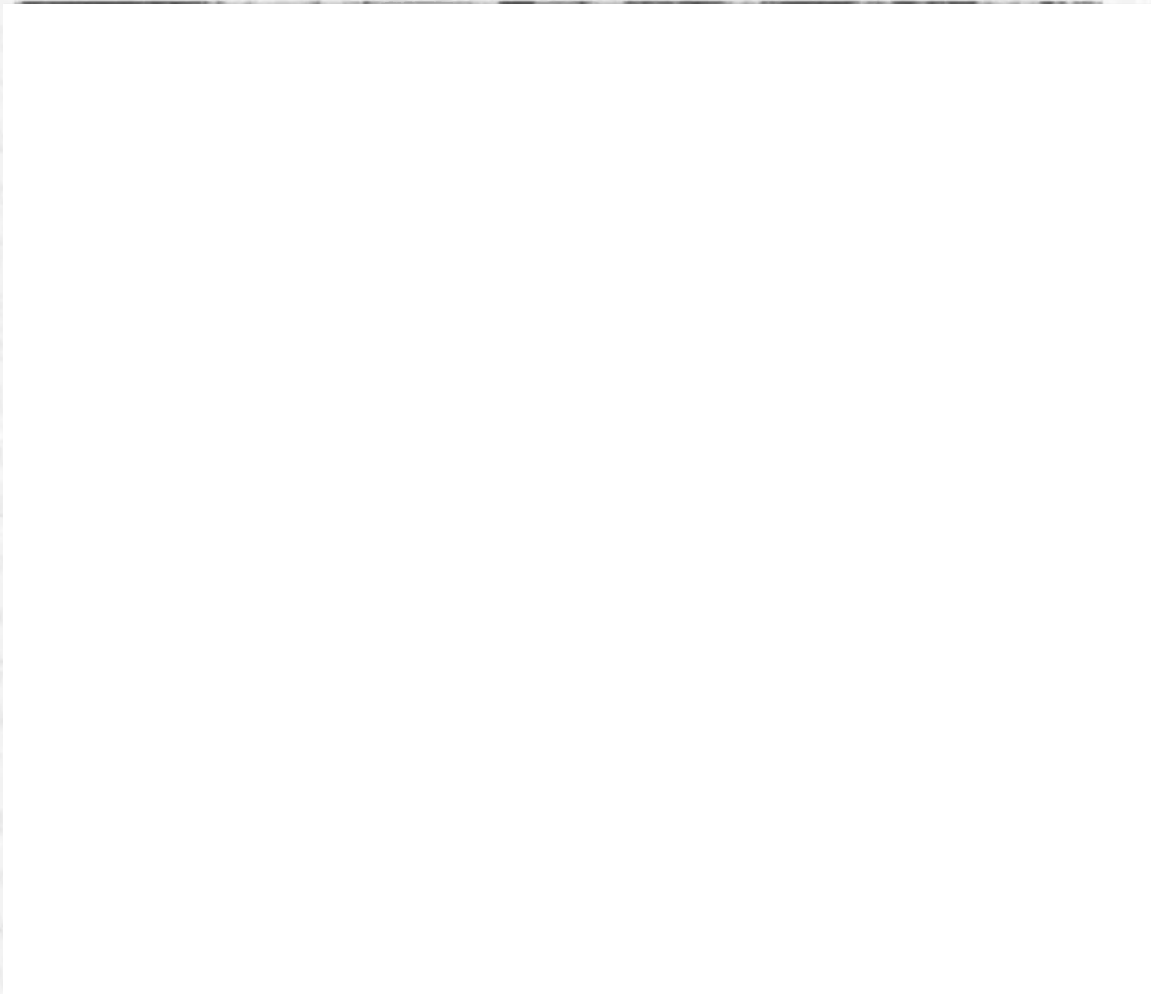


Figure 2.9a and 2.9b. Before and after the refurbishments of open urban blocks wherein sitting elements are included and these blocks form more spontaneous spaces for people to sit, rest, talk, etc (Source: Whyte 1980, p62)

Whyte's study focuses on promoting the use of urban spaces for increasing the social life in city centres. These spaces included small, concrete spaces with trees and water that host hundreds of people during the course of a lunch hour: places such as Greenacre Park or Paley Park in midtown Manhattan. Whyte initiated his studies by observing New York City parks, playgrounds, and certain informal recreation areas such as open spaces in city blocks consisting of offices, plazas, etc. He would then transform them into public spaces (figure 2.9a and 2.9b). Whyte (1980) considered that *'the best-used plazas are sociable places, with a higher proportion of couples than in less-used places'*. These spaces are sociable when observed with *more people in groups, more people meeting people or exchanging goodbyes* (p. 17).

Whyte (1980) later concluded that the numerous cases of unsuccessful public spaces are the result of their lack of concern for human uses and activities (see also Francis 1984). Whyte's (1980) studies progressed as a specific kind of urban design approach concerned with street design and management, and focussed on direct observation of how people interact with urban spaces (consisting of pockets or small spaces existing between buildings and streets). This aspect of interaction accounts for the relationship between the physical conditions, the built forms, of these spaces and the behaviour of people sitting, standing, lying down, etc. Whyte found various interesting spaces for people to sit (sittable places), not just in plazas but also in the indents of buildings and those places close to the streets. Whyte also found that people's activities are affected by the physical capacity of the street spaces, which would normally accommodate the flow of dynamic movement (including walking activities, traffic flow, etc.) in the city. Based on this, Whyte compared the number of 'sittable places' between various plazas and streets within the city of New York (1980, p.98, see also Whyte 1988). This makes an interesting case, as it demonstrates the levels of informality and formality in people's behaviour, and the effect of changing activities and the quality of (an) urban space.

Like other studies, Whyte's (1980) movement later advocated the broad theme of street "liveability" or "sociability", which was concerned with making lively or successful urban spaces for people (Appleyard 1981, Levine 1984, Moudon 1987). Whyte's proposition changed the design guidance for public places and streets in the city of New York. One of his important propositions was the provision of sitting spaces in public places in the city. This then posed the important question of how much the space would be needed for easing access to the street uses for people's other activities. Should the cost of providing these facilities be at the expense of the developers or the public, even though some of the spaces fall within the private boundary? This development has been attractive to the local authorities, which later provided incentive-zoning schemes using Whyte's proposition to establish certain guidelines on sitting heights. Because of his work, Whyte (1980) proudly claimed that *New York is now incontestably the most sittable city in the country* (p.75).

The effort of promoting public open spaces has also received recognition amongst psychologists. Providing open spaces for public use was much more encouraged where a pleasing working environment is incorporated within the outdoor environment of

building complexes (Gruen 1964, Erickson 1993). Tanuma (1980) argued that it is important to create an attractive urban design to reduce the 'urban stress' phenomenon. Public places were mainly designed in this way to alleviate contemporary urban symptoms. These places appear as extreme examples of reducing urban stress, which is the key social phenomenon resulting from the over-crowded conditions in big cities such as Tokyo (ibid).

Psychologists continued to focus on the benefits of open spaces for reducing 'urban stress'. They conducted research which particularly addressed the importance of having open public spaces in city centres. They examined the more modest urban and suburban parks and plazas that can absorb the recreation and relaxation of thousands on the weekend, as well as the physically constrained vest-pocket parks (Rubenstein 1997).

Whyte's method showed a new way to design public spaces – one that was 'bottom-up', not 'top-down'. Using his approach, design should start with a thorough understanding of the way people use spaces, and the way they would like to use spaces. Whyte argued that 'people vote with their feet' – they use spaces that are easy to use, that are comfortable. Observing people is a powerful tool, which can be adopted in the design process. Through observation and by talking to people, designers can learn a great deal about what people want in public spaces, and can put this knowledge to work in creating places that shape liveable communities. Designers are advised that they should enter spaces without theoretical and aesthetical biases and 'look hard, with a clean, clear mind, and then look again – and believe what they see' ([www.pps.org/info/placemakingtools](http://www.pps.org/info/placemakingtools)). However, Whyte's insufficiently detailed empirical exploration limits his method from providing a more objective understanding of the relationship between the capacities of urban spaces and the intricate stationary activities of people. The application of Whyte's methodology to the design of streets for people is consequently limited.

In the late 1970s, Jan Gehl in Copenhagen undertook similar studies to Whyte (Gehl 1975, 1979). In *Life Between Buildings* and *Using Public Space*, Gehl found a strong correlation between the numbers of people sitting to the number of those standing or walking. The numbers sitting corresponded to those standing or walking.

	Quality of Physical Environment	
	POOR	GOOD
Necessary activities	●	●
Optional activities	●	●
"Resultant activities" (Social activities)	●	●

Table 2.1. A graphic representation of how the rate of occurrence of outdoor activities increases or decreases depending on the quality of outdoor spaces. When the outdoor quality is good, optional activities occur with increasing frequency. Furthermore, as the levels of optional activity rise, the number of social activities usually increases substantially (source: Gehl 1987, p.13).

People sit, chat, or stand, performing static activities on the street for a reason. Gehl associates the sociable condition of streets with the three defined categories of outdoor activities: the *necessary*, *optional* and *resultant* (social activities). As illustrated in table 2.1, Gehl argued that these necessary, optional, and resultant activities occurred in accordance with the variable weather conditions. For instance, necessary activity could be expected to occur under nearly all conditions, and more or less independent of the exterior environment. Most ‘necessary activities’ are associated with walking and the participants have no choice. It means that when outdoor areas are of high quality (a good environment), such activities take place with approximately the same frequency. When a person waits for his or her friend/s or taxis, queues at cash points, or browses in window displays for his shopping needs, he performs his *necessary* actions. When a tourist reads a map whilst touring a city, he is sometimes obliged to do so. This activity is clearly necessary for the tourist.

People choose to execute optional activities. These activities only take place when exterior conditions are optimal, when weather and place invite them. They are especially dependent on exterior physical conditions. In a situation where people sit or stand whilst eating or reading, or when tourists or locals are ‘snapping’ pictures, or children playing on the street, they perform *optional* activities. In this situation,



people choose to perform their individual activities. Gehl's studies (1975) found that optional activities are highly dependent upon the weather. However, it could be argued that these activities are also affected by other people (when they are influenced socially); by physical design (when they are conducive to and attract certain activities); or geographical location of the area (when good accessibility is formed between neighbourhoods, town centres, etc, which would attract people to certain places in the city) (Appleyard 1980, 1987, Whyte 1980, Hillier 1984, Poole 1995). People could also be observed simply sitting or standing watching other people. It appears that people (other than security guards or police officers policing the streets) choose to watch other people and accordingly they perform optional activities (Whyte 1980).

The last aspect of static activities different from those of the necessary and optional is the *resultant* activities, which occur in almost any instances, as they evolve from activities linked to the other two categories. These are people's spontaneous social activities. Gehl (1975) considers that social activities occur as a result of the maximization of necessary and optional activities as people interact simply because they share the same space. These resultant activities are indirectly supported whenever necessary and optional activities are given better conditions in public spaces. In environmentally poor or tightly regimented and controlled public spaces, opportunities for such informal contact may be severely constrained or virtually non-existent. Resultant activities particularly refer to street vendors selling their goods (such as souvenirs and ice cream), or people distributing leaflets (Whyte 1980, 1988, Edensor 1998). These activities and the optional ones also depend on the weather, but more significantly, resultant activities exist because of other people. Street vendors will normally start anchoring their goods because of other people. Thus, when people perform resultant activities, they inherently perform '*social activities*' and therefore generate '*social interaction*' (Gehl 1975, p.13) (see table O in Appendix B for detailed lists of static activities).

Gehl's studies strongly indicated the presence of static activities in lively streets and urban spaces. He also believed that, although the physical framework does not have a direct influence on the quality, content, and intensity of social contacts, architects and planners could affect the possibilities of meeting, seeing, and hearing people. These are the possibilities that both take on a quality of their own and become important as

background and as a starting point for other forms of human contact. An investigation of the possibilities and opportunities of people seeing and hearing other people seemed necessary. This suggests that observing how people behave in this way could clearly inform and serve as the background of analysis, which would need to be considered at the beginning of the process of designing sociable public places. Nonetheless, Gehl's studies did not offer a systematic exploration of how such activities are interconnected with public places in the global context of cities. Designers should redirect their focus to encourage an in-depth understanding of people's activities in various urban scenarios.

### **2.6.2. Social Implications of Static Activities**

Coincidentally, Goffman's (1956) sociological concepts of focused and unfocused interaction highlight a new possibility for exploring how the psychological behavioural of people's static activities occur in streets. People standing around to watch and gaze at other people, or chat, etc – are the depiction of static activities and inherently underlie these behavioural conducts.

'Unfocused interaction' occurs when a person sits or stands alone. Such interaction can also be observed amongst groups of people who are strangers (whom Goffman describes as merely copresences). Unfocused interaction is manifest amongst the copresences, who are not directly involved with one another. The person/s could simply be observed waiting, eating, browsing at window displays, or watching other people. They do not necessarily sit or stand directly facing one another. They simply share the same space and are not socially active with one another. 'People see, hear, or gaze at one another but are only passively involved with one another' (Gehl 1975, p. 98). Such a collection of static activities constitutes non-verbal communication behaviour taking place (Argyle 1959, Goffman 1956, Gehl 1975). This thesis examines the 'unfocused interaction of static activities with people' by referring to it as 'people watching'.

Goffman's 'focused interaction' takes place when two people stand or sit whilst chatting to one another. The 'face to face' interaction occurs in these static activities when people are directly interacting and socially active with one another (Goffman 1956, p. 93). People respond to each other's presence especially when they are

engaged in conversation, doing business, etc. This composition of static activities demonstrates how people relate to each other and communicate verbally in their everyday behavioural conduct (Argyle 1959, Goffman 1956). This 'focused interaction of static activities with people' is referred to as 'people chatting'.

The psychological and social ecology studies found that the above social implications could affect the existence of a crowd or the proxemics of people in certain urban situations (Stokols 1976, see chapter 3). Though sociologists believe that crowding theories are drawn from a large context of the dwelling aspects of people in cities, studying the consequences of density in microenvironments is also important. This would enhance the understanding of various aspects of living in cities (Fischer 2002). Such a micro context of the environment could be defined by observing static activities of people in streets in order to understand the crowd more objectively (empirically). This could help designers to understand the effect of crowding on people, with the possibility of predicting its status or limitations in influencing the lively use of streets by people. This would facilitate an understanding of the objective capacity of the street in accommodating the appropriate number of people to make streets socially successful.

### **2.6.3. Socio-physical Implications of Static Activities**

It is expected that overcrowded streets motivate people to move on to less busy streets in order to wait for their friends, to talk, to sit, etc. However, in conducting activities of these kinds less crowded streets are not necessarily more favourable to people. Whyte's (1980) studies found that physical designs could influence or inhibit people from using some streets. Attractive physical designs could influence people to sit, stand, smoke a cigarette, or wait for friends on them. Thus, attractive physical design could enhance the concentration of people in streets. Unattractive designs could deter people from particular streets (see figure 2.10). Such a deterrent would eventually leave some streets abandoned, and might instead attract outsiders, such as beggars, the homeless, vandals, etc. The less crowded streets would then no longer be attractive to people (Whyte 1980, Gehl 1975, Haas Klau 1999).

The earlier explanations by environmental behaviourists, architects, and geographers, of direct and indirect interactions between people and the environment are

particularly concerned with the effect of the physical environment on people's behaviour. These views are different from those of non-designers', primarily sociologists. Sociologists traditionally believed that the physical environment and its organisation had no major effects on people. They argued that it is social, economic, and other similar environments that are of major importance. However, Rapoport (1976) suggested that the particular views from geographical fields of study could be useful to designers. Their studies have encouraged three basic attitudes. The first is '*environmental determinism*': the view that the physical environment determines human behaviour. The second is *possibilism*: the view that the physical environment provides possibilities and constraints within which people make choices based on other, mainly cultural, criteria. The third is *probabilism*; the current view that the physical environment provides possibilities rather than determinants for choice and not determining, but that some choices are more probable than others in given physical settings (p.3) (see Chapter 4 and 5).

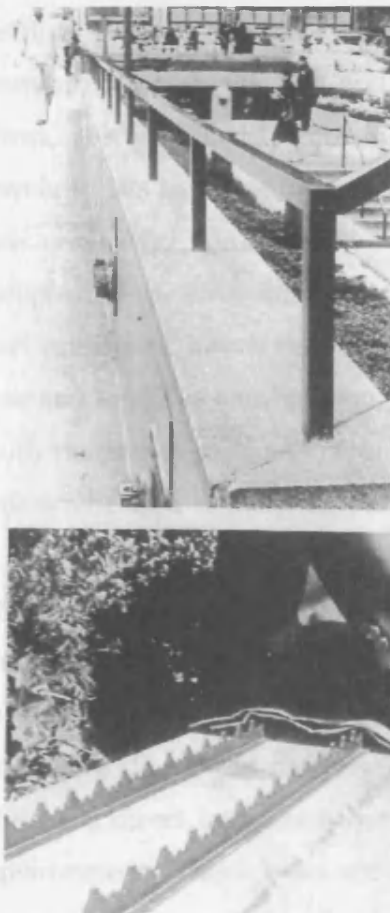


Figure 2.10 Some bad examples of physical designs available on streets (Source; Whyte 1982, p. 29)

In planning and design, environmental determinism has been the traditional view (ibid.). According to this view, geographers generally believe that changes in a

person's behaviour in the environment increase happiness, increase social interaction, etc. This particular view has been developed further. Barker (1968) and Goffman (1956) suggested that the built environment could be seen as a *behavioural setting* – a setting for human activities. Both authors saw that behaviour settings may be neutral, inhibiting, or facilitating. They said that a behaviour setting may be facilitatory to the extent of acting as a catalyst or releasing latent behaviour, but could not determine or generate activities. They realised that, whilst in terms of observation the distinction may be difficult to determine operationally, theoretically the distinction seems very important. Both authors also insisted that somehow people would act and behave differently in different behaviour settings (Barker 1968, Goffman 1959, 1963, 1972).

Rapoport (1976) saw that behaviour settings and, more generally, the built environment, provides cues for behaviour and that the environment can, therefore, be seen as a form of *non-verbal communication* (p.4). The general reference to these settings could account for fixed (walls, doors, etc.) or semi-fixed features such as furniture, furnishings, etc, and also informal, non-fixed features (people and their dress, gestures, facial expressions, and proxemics (these are typically related by psychologists to the subject of non-verbal communication)). It is argued that the way this non-verbal communication reveals the direct and indirect interaction between people and the environment bears similarity to Goffman's description of the focused and unfocused interaction of people communicating verbally and non-verbally with one another. The combination of these similar contexts of interactions, accounting for both the sociological and architectural schools of thought has been neither explored nor synthesised in the design of streets for people.

It could be inferred from the above that people behave directly with the environment, when fixed and semi-fixed features facilitate their behaviour. Such features are designed with certain purposes. Accordingly, people would be expected to behave directly in response to the design purpose of these features. Therefore, there is a direct interaction between people and the particular design of the physical environment. There is an active, reciprocal involvement, in which people and the design(ed) features complement each other's presence in the environment. It is apparent in this situation that the environment could shape people's behaviour (Rapoport 1976, 1979, Lawson 2001).

It is also apparent that a 'direct interaction' occurs between static activities and the physical design in the same way a 'focused interaction' occurs amongst people. On a larger scale, when people occupy and use (sit, or rest) parks or other urban spaces in the expected and obvious manner, they manifest a direct response to the environment designed for them. On a more minute scale of the environment, it is common to observe people sitting outdoors at street cafes, and standing near pubs, newsagents, or window displays. Such land uses would naturally attract people to sit and stand by them, according to their purpose (of use). For instance, people are commonly spotted sitting, eating, or drinking on chairs along street cafes (Rudofsky 1969, Pushkarev and Zupan 1975). It is also common to observe people queuing to withdraw money at cash points. These situations describe how people behave directly in response to the physical design elements that are embedded in the land uses. They are the manifestation of 'formal behaviour' with the land uses and other physical designs surrounding the street environment. They are the direct activities of people responding to the physical elements, which are designed for their 'expected' activities. This 'focused interaction of static activities with the environment' demonstrates an aspect of 'environmental probabilism'. The physical settings are specifically designed to provide choices for people to act, in which the use of some settings is more probable than others.

It is also inferred that people manifest an indirect interaction with the three aspects of the behaviour settings in Rapoport's description. This type of interaction occurs when the behaviour settings are neutral (is not particularly designed for people's use) and act as catalysts when encouraging some 'unexpected' or 'spontaneous' behavioural activities. For instance, fixed and semi-fixed features may not be designed for the specific use of people, whilst the non-fixed features of people's expressions are not related to any design character of the built environment. These settings simply coexist in the same environment with people, similar to people encountering each other and forming a copresence in a particular environment. People see opportunities and habitually use the behaviour settings in the environment in a way they see fit according to their needs, culture, etc. People shape the environment and do not show a direct response to the original character of the environment (Rapoport 1976).

On a bigger scale, the above situation could be described with the formation of slumps (in cities), and the growth of unplanned (spontaneous) market places. The

analysis of spatial patterns in spontaneous retail development (referred to as 'ribbon-retails') in the streets of Dhaka in Bangladesh illustrates how people utilise spaces informally as they find fit for their purpose (Hossain 2002). Such spontaneous behaviour also occurs on a micro scale of the environment, when it is observed that not only do people sit on benches, or stand, sit and wait at bus stops, but they also sit or stand at locations, which are not designed for their random use. It may seem peculiar, but in streets people sit or stand at almost any location which they find conducive. Figure 2.11 illustrates the random (informal) locations in streets where people sit, watch, and drink (Whyte 1980, p.98). Often, these physical settings, as shown in the picture, are not designed for any such purpose.

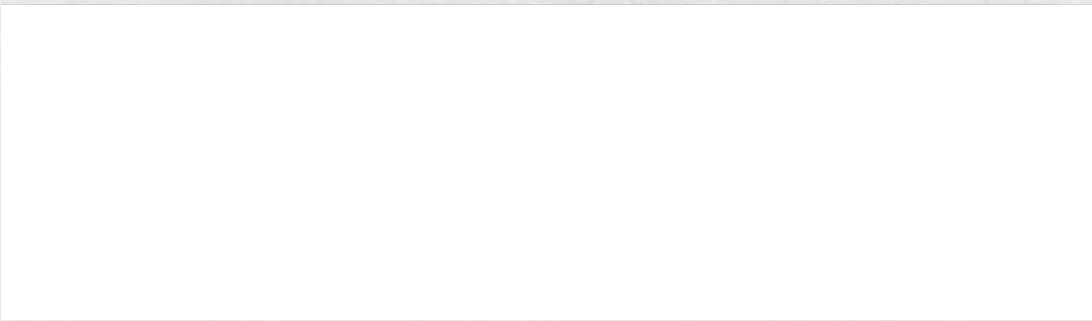


Figure 2.11. These illustrations demonstrate various aspects of static activities performed by people in streets. The first picture on the left shows people sitting, talking, and reading, etc, on the steps at the entrance of a building. The second highlights the activities of men sitting and watching, 'sizing up' women. The picture on the far right shows an extreme case of static activity of a person sprawling lazily on a sittable rock. Seemingly, the favourable rock has not only generated a pleasant topography, but also encouraged interesting static activities of people on the street. It is obvious that the rock was not designed for such activities. However, according to Whyte, 'people would sit anywhere where there are places to sit' (1980, p.98). They would behave peculiarly and use the spaces in any way they wish in order to satisfy their comforts or needs, hence perform static activities.

Static activities also manifest informal relationships to the land uses, where they interact indirectly with the environment. In this situation, people are observed eating or drinking in front of cash points, using their mobile phones at window displays, cafes or restaurants, etc. People behave in a way which is divorced from the design intention of these land uses. People perform static activities at these locations wherever they find them suitable. In some extreme cases, people oddly resort to standing or sitting against lampposts, near junctions or intersections, or simply at the edge of footpaths, on the streets. These are the physical designs which form a series of activity nodes, some transport and public facilities, etc. However, people 'see' these settings as an 'opportunity' and use them according to their needs (Whyte 1980, Pressman 1987, Kostof 1992, Batty 1994).

The above situations explain the manifestation of an indirect and “unfocussed” interaction between static activities and the environment. The physical settings are not intended (some might have not been designed at all) for any aspects of use by people (Rapoport 1976). The thesis sees this situation to demonstrate an aspect of ‘environmental possibilism’, a situation embedded in random people’s behaviour. Such an impact of static activities on street environments has been overlooked and not fully understood by designers. The thesis argues that when people behave indirectly to the physical purpose of the environment, they do not necessarily become unable to understand or share the ‘code of language’ of the particular environment – making it not communicating’ to people, as earlier suggested by Rapoport (see section 2.1.2). As were described above, those spontaneous actions have taken place due to people’s needs, cultural influence, or everyday routines (see chapter 3 for further examples).

The composition of the physical designs (deliberately designed or not designed for people) forms the ‘topography’ of the street (Lynch 1984). These physical designs could be conducive (accommodative) or non-conducive (non-accommodative) to people’s static activities. The physical designs have the potentials to influence (afford) or inhibit (prevent) people from sitting on or standing by them (Rapoport 1976, Lynch 1984, Hillier 1984) (see table O in Appendix B for a detailed list of physical designs).

Though Whyte’s (1980) studies indicated much of the relation between the direct and indirect character of static activities and the physical design of the street, Whyte did not distinguish the presence of these activities in the environment and the environmental probabilist and possibilist characters of static activities in streets have not been well understood. This limits the understanding of the effect of physical designs in influencing the occupation of people in certain street environments. Furthermore, the combination of the two similar contexts of static activities, accounting for the sociological, psychological and architectural schools of thought, has not been explored or synthesised.

This section has suggested that the physical design could influence the environment of the street to be occupied by static activities. This raises the issue of ‘environmental probabilism’, in which space is designed to encourage social interaction. It makes the occupation of one space more probable than another. On the other hand, the



availability of certain physical designs, which are not specifically designed for people's use, could also influence the occupation of the street by static activities. This illustrates environmental possibilism, in which the physical designs, randomly occupied by people, are not particularly designed for encouraging social interaction. People choose to utilise the environment based on their individual purposes, which are not related to the physical condition of the street. Seemingly, all three attributions, environmental determinism, possibilism and probabilism, proposed by geographers, could be applied to these situations (see Chapter 3 and 5).

#### **2.6.4. Spatial Implications of Static Activities**

Static activities could exist randomly in street of all sizes within the global network (i.e. the pattern or system of streets connected to each other) in a particular area (Whyte 1980). Though his empirical evaluation on pedestrian static activities is inadequate, Whyte (1988) found that a straight flow of people tends to diverge as the rate gets to ninety people per minute. This has enabled Whyte's empirical evidence to be used objectively for evaluating the capacity of the street to accommodate a certain quantity of people's activities. This suggests that other aspects of people's activities (which are mostly directed to static), besides walking, could influence the concentration of people in streets.

The architectural field of studies by Hillier developed a new technique of analysing the environment (particularly referred to as space). Hillier et. al (1992) suggests that people's behaviour that is central towards their natural movement, particularly that related to walking activities, could be explained, and therefore predicted, by analysing the empirical value of space. This *natural movement theory* gives a value to space which is referred to as (the) *integration value*. (The) integration value determines how one space is connected to another in a global system (structure) of urban space (see also Chapters 4 and 5). The more one space is connected to another within its global system, the higher the integration value of the particular space. A highly integrated space could influence a higher occupancy through people moving into the area and thus the emergence of static and other activities, such as retail, businesses, etc, which can be regarded as the multiplier effect of the natural movement of people into the area (Hillier 1984, 1996).

Hillier suggests that two concepts, the connectivity and visibility of people in individual spaces in a certain boundary of area, are fundamental. The connectivity and visibility of urban and street spaces can explain the intensity of people moving about in cities (Hillier and Hanson 1984, Hillier et. al 1992). Hillier (1983) believed that the topology of streets, the way streets are connected (assembled or configured) to each other within their network (the global system of an urban space) could encourage or discourage the movement of people into an area. Highly connected or 'high-integrated' streets within the global urban system are often accessible and therefore able to influence a high concentration of people. This could be proven by observing the pattern of people's movement (predominantly related to the pattern of people's behaviour) in streets (see chapter 5).

These studies also suggested that highly walkable streets could be regarded as sociable, hence lively with people (Hillier 1996). However, when considering streets being occupied by static activities, the highly walkable streets could rather seem more accessible than sociable to people. People walk through the primary or main streets, which are naturally designed as highly accessible for them. People may only use these streets as through streets. Such conditions of use of the streets are subject to their having been criticised as unsuccessful due to the lack of mixed activities (Jacobs 1965). Whyte (1980) has specifically claimed that the reason for unsuccessful streets is not due to the lack of people walking through them but to the lack of social activities of people chatting, meeting other people, etc.

Hillier's theory could simply be used in guiding the design process and predicting the potential occupation of people in a certain space. Nonetheless, walking activities are the predominant design-guiding factor. These are more directed towards designing the accessibility of the street and providing ease of access for the movement of people rather than sociability. Using Hillier's technique of analysing squares in Italian cities, Cutini (2003) found that people occupy some highly accessible squares less than those that have low accessibility. Apart from walking, this implies that some highly accessible urban and street spaces have been inefficiently used for other activities.

Static activities might unexpectedly appear more dense in small or side streets (Haas Klau 1999, Appleyard 1988). People in static position could appear alone or in groups, in the small (or tertiary, i.e. far from the main one), medium (or secondary, i.e. the

side streets off the main one), or large (or primary, which is normally the main or so called 'high street') streets (Elkington et. al 1976). These hierarchies are differentiated as primary (large size), secondary (medium size), and tertiary (small size) streets. Such hierarchies of streets also exist in residential areas and can be pedestrian or non-pedestrian (Appleyard 1980, Southworth and Johnson 1997).

The above cases show that people performing static activities are as significantly random as people walking in the city are. The cases also imply that streets, which are highly connected and highly used by pedestrians walking, are not necessarily highly used by pedestrian static activities. Jacob's (1993) comparisons between great streets have proven that highly occupied streets with static activities are not necessarily the major ones in their cities (Table 2.2). There are variations in the concentration of static activities occurring in the different hierarchies of streets in cities. Static activities could also be more highly concentrated in one primary street than another. This situation can also be observed between secondary and tertiary streets. It is then possible to say that some secondary and tertiary streets could be more highly occupied by static activities (could also be more lively) than primary streets (Whyte 1980, Gehl 1975, Appleyard 1980).

APPENDIX

Pedestrian Volumes on Selected Streets

Street	Date/Time	Effective Walk Width	Number of People	People per Minute per Meter	Notes
Bonifacio shopping street, south of Plaza de Catalunya on east side	May 1990 8:25-8:31 a.m. Monday	5.5 m	240	8.7	Most walking fast; some strolling and window shopping but no stopping.
	6:15-6:20 a.m. Monday		358	13.0	Many speeds; some stopping at windows. A sense of crowding; some spill over into street, could not run.
	6:30-6:34 a.m. Monday		347	12.6	Same as above; hard to count when people come in surges.
Via Galdà di Biondo, Rome	May 1986 4:31-4:41 p.m. Saturday, south side	4.5 m	258	5.2	320 autos and cycles in 30 minutes. Pedestrian counts much higher than street in February-March/April 1991 on Saturday nights at 7:00 p.m. Crowded so that fast walking not possible.
	4:45-4:53 p.m. Saturday, north side		409	10.4	
	5:27-5:32 p.m. Monday, north side		124	5.5	
	5:15-5:26 p.m. Monday, north side		383	8.5	
	5:45-5:49 a.m. Monday, north side		137	6.9	
	5:36-5:41 a.m. Monday, north side		249	11.1	
Via del Corso, Rome at Via Frattina, east side	June 1990 11:23-11:30 a.m. weekday	3.0 m	202	13.3	Not possible to stay in walk; people walk in street; many different paces but not fast.
at Via Vittoria	11:19-11:44 a.m. weekday	3.3 m	253	9.2	Walk not wide enough; people come in spurts; much window shopping; people walk around parked cars, further into street, perhaps 10% faster walk on sunny side; many paces.
south of Via Condotti	5:33-5:35 a.m. Saturday	11 m	650	14.8	No cars; larger where it's hard to count. Faster walking; fast pace possible near black wall.
north of Via Condotti	6:23-6:25 a.m. Saturday	11 m	628	12.3	
	5:45-5:45 a.m. Saturday	11 m	707	12.9	Some cars, taxis, motorcycles; hard to count during rush; loosely and some fast walking.
	6:12-6:17 a.m. Saturday	11 m	765	13.9	
	26 April 1986				
Via dei Giubbonari, Rome	June 1990 5:00-5:05 p.m. Friday	6.7 m	239	6.6	Some cars and motorcycles; most people walking fast, in one direction. No sense of crowding, maybe because of directional flow. Hard to walk fast against flow.
	26 April 1986 5:59-6:09 p.m. Saturday	5 m	840	16.8	Crowded; most walk slowly; people in the way.
	April 1985 midday, 10 minutes	5 m	377	7.5	Leisurely walking; can walk at any speed.
Maiden Lane, San Francisco, east of Union Square	23 December 1988 12:22-12:32 p.m.	11.2 m	252	2.3	Most people on walks; never felt crowded; speed between slow stroll and purposeful walk.
	21 January 1989 1:25-1:35 a.m.	11.2 m	140	1.2	Empty at times.
Market Street, San Francisco, at Powell Street	23 December 1988 1:00-1:10 p.m.	11.9 m	1110	9.3	Not purposeful walking; surges with traffic lights; only at peak of a light was walk too crowded for normal pace.
	21 January 1989 12:50-1:00 p.m.	11.9 m	390	2.3	Never crowded.
Passeo de Gracia, Barcelona	May 1986 12:30-12:35 p.m. Monday	6.3 m	188	8.8	Fast, purposeful walking; some strolling; waves due to traffic light; generally uncrowded.
Pont Street, San Francisco across from Grumpa, at #251	21 December 1988 2:02-2:12 p.m.	5.2 m	237	4.5	Purposeful walking; people in small groups; free movement.
	21 January 1989 1:25-1:55 p.m.	5.2 m	326	2.4	Generally purposeful walking; people seem to have destination in mind.
at Campy, #250	21 December 1988 2:18-2:28 p.m.	4.3 m	417	9.5	Very crowded; often too crowded to move; police barriers in front of display windows.
at #555	21 December 1988 3:43-4:57 p.m. Thursday	4.8 m	36	1.2	Purposeful walkers; mostly uncrowded; not crowded.
Princes Street, Edinburgh	May 1990 2:15-2:29 p.m.	5.5 m	210	11.3	Break walking pace; no dawdling; slight sense of crowding.
Ramblas, Barcelona	May 1990 5:15-5:29 p.m. Sunday	14 m	346	3.4	Walking at all speeds; no sense of crowding, but a nice sense of people.
at Theatre Capucines	5:00-5:05 p.m. Monday	7.3 m	252	6.9	All paces; running would be hard; sense of many people but not of a rush or a jam.
	5:30-5:35 p.m.	7.3 m	327	8.9	Some big surges; more crowded; pace a bit faster but not a big difference.
Regent Street, London north of Oxford Street	May 1990 11:15-11:20 a.m. Monday	5.9 m	55	2.9	Any speed possible; most walking fast.
at Great Marlborough	11:45-11:50 a.m.	4.6 m	190	8.3	Most walking fast; any speed possible; sense of many people, but not of congestion.
Strøget, Copenhagen at first intersection from east end	July 1990 12:25-12:30 p.m.	10 m	653	13.1	Many stollings; some fast; big surges because of traffic lights; many baby carriages; hard to walk fast comfortably; blocked at times.

Table 2.2. Jacobs (1993, p. 316)

In transport studies, the predominant concerns of people in the city are normally expressed as the accessibility of urban spaces within the whole city structure (Gunarsson 2000, 2002). People-oriented measurements for evaluating transport efficiencies are used employing methods such as widening footpaths, and easing circulation for cycling and mobility, i.e. providing transport facilities to distribute people from one place to another (ibid.).

Some other more objective research shows that there is a correlation between pedestrian movement and the presence of people (in moving or static positions) in certain urban spaces (Golledge 2000, Pacione 2001). In the realm of spatial behavioural studies, human geographers have been using people as indicative of movement activities in the city (Golledge 2000). These studies only briefly indicate the spatial aspects of static activities in urban space. Detailed studies on static activities in streets are still insufficient. It is again argued that directing concerns toward enhancing the accessibility of urban spaces in this manner does not ensure streets will be successfully used by static activities.

Such appropriations of static activities on the street have demonstrated the basic everyday activities of people. This brings into question the important social, socio-physical and spatial implications of static activities in streets. There is currently no empirical analysis available that synthesises these complex relations between static activities of people and how people interact amongst each other and with the environment (see Chapter 4).

## **2.7. ASSESSING STREET ACTIVITIES**

Clearly, many of the given design examples implicate the complex relations of static activities to people as well as to the physical environment of the streets. These particularly challenge urban design practice in focussing on how streets successfully function for static activities. This gives another dimension in the design of the streets, which would need to be assessed for bringing back the life on streets to people. This section is concerned with the way conventional people-based design approaches assess the success of streets based on the activities of people.

While architects design buildings, planners design street routes within the local, district, or regional plans. Architects normally ask whether the design of the building should follow its function, or the function follow the form of the building the architect designed (Hale 2000, Hayes 2000). The underlying issue of both these design aims would affect the actual performance, the successful use and efficiency of the buildings or streets. However, the users, who are the public, would be those who would give the final assessment of these actual performances. The public include the building occupiers, and the street users the pedestrians and traffic. Their assessments are bound to focus on the social aspects of the spaces created (Sommer 1969, Appleyard 1980, Taylor 1998).

The earlier discussion has sketched an overview of the various functions of the street catering for the diverse activities of people. Incidentally, some industrialised nations have proven that 'slum streets' have retained their vitality and traditional social functions (Jacobs 1965, Levitas 1986). Such is the case of 'streetology' as practised in streets in California. This indicates how the different ethnic groups represent the urban culture and activities in streets, which are not necessarily related to shopping. This demonstrates the changeable everyday pattern of people's activities, depending on whether the current habitants reside, work, or visit the cities.

Owen (1987) argued that,

*Urban designers must balance an expanding spectrum of technical, administrative, economic, social, and aesthetic issues. He or she must skilfully manage a large design consisting of technical specialists, public officials, artists, and community representatives. The idea is to help the local community to identify opportunities to fulfil, so they are non-traffic objectives, and to understand implementation and funding techniques (p. 275).*

Some of the techniques used include environmental enhancement, pedestrian activities, and community development objectives, and these are implemented within the context of street engineering projects. However, these techniques still lack objective measures, which explain and synthesise how people in stationary positions interact with each other, and the streets' environment. This is partly because most such engineering based projects still dominantly viewed the role of the street as a

passage. Treating streets in this manner will emphasise their spatial dimension for which are provided amenities and transportation, and significant influences on the density of people walking together with the transport access (Levitas 1986).

Technology now allows proposed improvements to be expressed in a three-dimensional (3-D) representation through computer-aided design (CAD) (Turner 1984). This technique simulated proposals where the quality of the urban space could be easily visualised. However, the implementation of such proposals could be difficult. This is because, in reality, there are many more urban factors which would need to be taken into account. Those designers present their visualisations as 'ideal images' rather than as practical operational solutions for analysing and understanding the intricate activities of people in the overall function of the street.

The conventional criteria used for measuring the success (or liveliness) of streets within the context of planning policy guidance would normally account for the economic and social needs of people in cities. Policies and legislation are sometimes established for measuring air pollution controls, safety, traffic calming, etc. Such efforts had the same motives, i.e. to improve urban and street spaces for people (ODPM 2001, 2002, 2003, 2004, English Heritage 2000, 2004, Haas Klau 1994, 2000). The 'Good Practice Guide UK' for managing Town Centres evaluates the liveliness of these centres through trading performance with the different types of uses. Their key requirement gives priority to the demands and needs of people. The trading performance is monitored by a manager as part of the process to ensure the success of the newly created town centre (DOE, 1996). Briefly, these measures also used accessibility as one of their important criteria in ensuring the liveability of the place. It was assumed that the pedestrian priority streets of the schemes are essential if the right balance between traffic and people is to be achieved.

A survey is normally conducted by using information through questionnaires put to the tenants and people on the street. Some measured these performances by mixing them with the notion of the 'health check', which assesses the outcome of city-centre revitalization efforts and then monitors the progress (Tomalin 1997, Hoggs 2001). In order to focus on retail performances, the determinant variables, and the number of pedestrian footfalls was used. The main measure observes whether there is an increase in the number of pedestrians walking into the centres. Pedestrian walking

activities are obviously the important variables used to provide an objective conclusion of such measures. These measures assumed that the greater the amount of people flow (the footfall), the livelier the streets (DOE 1996). However, measuring street liveability, which is predominantly based on people walking, would discount people sitting, standing, and talking in streets.

However, it is important to argue that besides walking, people also perform various activities when going for shopping. People shopping in cities are fundamental to the process of bringing back the social life into cities (Berk 1976, Shields 1992, Jacobs 1993, DOE 1996). Mixed retail outlets are used to ensure high usability by pedestrians. Nevertheless, some unusable spaces may still exist because of their inability to accommodate certain formal and informal activities. This mainly concerns people sitting down to rest, or standing and waiting. These activities are essential for encouraging social interaction in streets (Berk 1976, Gehl 1975, Whyte 1980). They are particularly relevant to urban designers identifying the socio-physical properties, that is the potential spaces where people's activities might be located in static positions. Potentially, this would encourage more socially active streets (Gruen 1964, Anderson et. al 1986, Fyfe 1998, Lawson 2001).

Most urban design studies foresee street capacity to accommodate people and their activities as central to the process of designing them as lively (Jacobs 1965, Rapoport 1987, Whyte 1980, Carr et al 1992, Loukaitou-Sideris and Banerjee 1998). These raise the issue of the practicality of employing such processes theoretically and objectively. The following matrices, tables 2.3 and 2.4, evaluate the theoretical and practical issues related to street sociability and accessibility as described by the various authors. The issues are listed as the important urban mechanisms that should be considered in these two fundamental uses, which should be incorporated in the design and management of streets for people. It is argued that street sociability and accessibility would need to be evaluated more specifically. Their evaluations would need to be more empirical in order to make the concept of streets lively for people.



Authors / Criteria for Sociability	Appleyard	Buchanan	Rapoport	Cowan	Richards	Hillier	Madani-Pour	Caliandro	Anderson	Whyte	Haas-Klau	Jacobs, J	Rudofsky
user diversity on street space	•			•						•		•	•
suitable open spaces			•			•				•			
physical elements that support the activity								•	•	•			
safety and security												•	
environmental comfortability		•	•		•					•	•		
facilities, service	•							•	•	•			
mix land uses	•			•									•
less regulated cafe	•			•									•
sense of gathering				•						•			
cultural product/festival				•			•			•			
local structure, density		•	•	•									
publicness, public realm	•			•			•	•	•			•	

Table 2.3. The sociability of streets. The above authors raise the listed indicators, which include static activities in the process of making sociable urban streets for people. The issues relate the social, socio-physical characters of the streets to human needs. The physical spaces also seem necessary in incorporating the social needs of people on the street. These spaces implicate strong relationship to the condition of the street as accessible for people.

Authors / Criteria for Accessibility	Appleyard	Buchanan	Chick	Cowan	Richards	Hillier	Caliandro	Anderson	Whyte	Hass-Klau	Jacobs, J.	Gold	Wolf
direct/shortest route path for pedestrian						•		•	•				
transition zone, of public/private use							•	•					
easy access		•							•		•		•
permeability									•				
intersections	•	•										•	•
parking availability			•										
footpath provisions	•	•									•		
street connectivity				•	•	•							
congestion		•											•
waiting time at traffic lights		•	•		•								
circulation pattern													•
efficient pedestrian flow			•		•								
street junction directly accessible to plazas/squares	•									•			
barrier free movement			•		•					•			
length of road	•												•

Table 2.4. The accessibility of streets. The above authors relate street accessibility to the incorporation of dynamic movement of pedestrian walking and traffic. Issues that are related to street junctions, intersections, easy access, and footpath provision are repeatedly mentioned. These issues are evidently crucial in achieving the balance between the static and dynamic activities of people when making streets lively for people.

## 2.8. SUMMARY

This chapter has reviewed why the process of designing urban streets that incorporate the everyday activities of people still challenges urban design practice. The chapter focuses on this issue in the many urban streets which are more occupied by people sitting, chatting, standing, and watching. Generally, the particular streets that accommodate more of these aspects of people's activities are considered lively. Yet, at the same time, the main function of these streets as a thoroughfare, connecting urban spaces for people and traffic within the city, remains the same. The chapter examines this function within the sociable aspect of streets as well as their accessibility for static activities. It relates the examination of these functions to the convention of the people-based approach in street design as adopted in urban design practice.

The chapter first investigated how urban design practice perceives streets as a place of interaction. It then examined various theories and practical studies on streets in the fields of sociology, psychology, architecture, urban design, planning, and transport. It noted the different approaches and understandings of how social interaction takes place in streets between the professionals in the built environment (particularly urban designers) and sociologists and psychologists. Sociologists and psychologists deal with social interaction between people, whilst designers note this interaction as also happening between people and the environment. The former explain how people communicate verbally and non-verbally with one another. The latter relates to the non-verbal communication between people and the environment.

The chapter reviewed urban design interpretations and solutions for making streets socially functioning for people. It sought a new urban design dimension in a theoretical and practical framework for guiding the design of streets for people. This was then investigated in relation to theories of how streets generally function for people in cities. These theories were further examined in relation to how the contemporary pedestrian provisions in urban areas incorporate people and their activities. The limitation of these provisions in prioritising streets for people and their static activities was then examined in relation to the ongoing conflicts that arose from the growth of cities.

The above led to the theoretical and objective synthesis of interaction and static activities in streets. The chapter continued to investigate the factors which inhibit and influence pedestrians to sit, talk, eat, etc, within the context of how people behave amongst each other as well as with the physical environment of the street. This implicates the complex social, physical design and spatial aspects of static activities in streets.

The positive impact of such a complexity of static activities in inducing streets to become lively for people is hard to comprehend, as controls and regulations bind the street in modern cities. Partly, such controls took place due to the diverse and changing nature of social and economic conditions in contemporary urban society. One may regard the regulated modern environment as the consumer capitalist movement emerging as a large model of privatisation and resulting in the loss of public life (Appleyard and Jacobs 1987, Davies 1990, Madanipour 1994, King 1996, Edensor 1998).

Most design approaches are interested in the dual functions, the social (sociability), and spatial (accessibility) of the streets (Appleyard 1987). It is therefore crucial to serve and balance the demands of use of both pedestrians and traffic in cities. However, streets would need to emphasise their use by pedestrian activities. This leads to an investigation of how the traditional and existing approaches of street design and management have evaluated the (successful) function of streets based on their uses by people and their activities. The next chapter continues to explain these functions of the street in the everyday life of urban society. It expands on these theories and elaborates on the detailed process for developing the theoretical and objective operational framework for the design of sociability and accessibility, which incorporates static activities

## CHAPTER 3

# THINKING STREETS: THE SOCIABILITY AND ACCESSIBILITY OF STREETS

*'In contrast to city engineers who must consider standards to support a specific level of traffic in a street design, urban planners must consider the experience of 'getting there.'*

(Levy, 1998, p.61)

*'What attract people most, it would appear, are other people'*

(Whyte 1980, p. 17)

The literature in chapter two shows that urban design practice has begun to understand the implications of the sociological and psychological behaviour of people in bringing back the social life in city streets. The people-based approach has been in the forefront of these urban design processes and central to providing the two fundamental functions, the sociability and accessibility of streets. Sociability affirms the appropriation of streets for people and accessibility formulates people-appropriated spaces within the local to global network of streets in the particular area.

A new dimension is envisaged in rethinking the design function of the streets for people's static activities, which could be influenced as well as inhibited by three factors. The first is the presence of other people, the second is the physical designs (conducive or non-conducive aspects), and the third is the spatial configuration of the urban structure (the connectivity of the local and global network of streets in the area). This calls for a theoretical and practical framework for evaluating lively streets from these aspects of static activities. This inclusion would lead to the process of designing the sociability and accessibility of the particular streets, which would give priority to people.

The question is raised: how could streets be addressed sociologically? This particular question leads the investigation to perceive streets first and foremost as ‘social sites’, in which the sociological as well as psychological behaviour of people are the key issues (Bennet and Watson 2002).

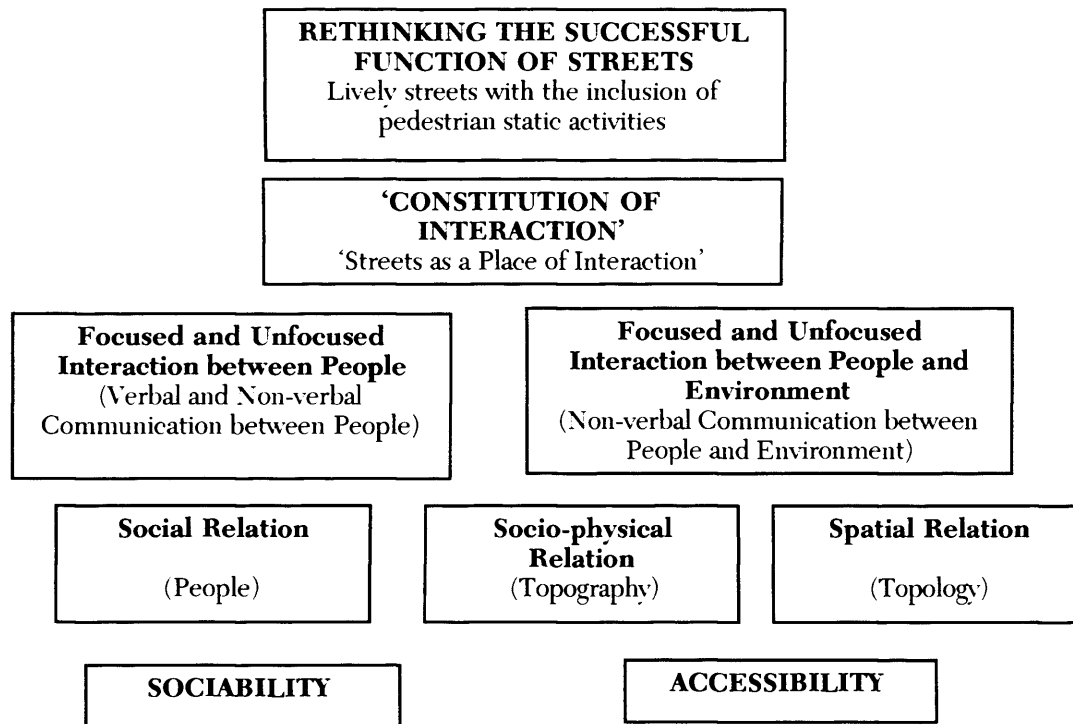


Figure 3.1. The sociability and accessibility of street liveliness, which incorporates static activities of people.

This chapter, *Thinking Streets*, focuses on the direction in which the making of sociability and accessibility could be theoretically and practically defined based on static activities. This accounts for the sociological and psychological behaviour of static activities in affecting the social, socio-physical, and spatial interaction amongst people and between people and the environment (see table O in Appendix B, and tables 2.3 and 2.4 in chapter 2 for cross-referencing). It is schematically illustrated in figure 3.1.

The chapter is divided into the following sections. Section 3.1, *The Return to Sociable Urban Streets*, examines the urban design understanding of sociable streets in urban areas. Section 3.2 discusses the behavioural effect of static activities on people in street sociability: how streets are able to accommodate static activities. It addresses the social and socio-physical relations of static activities in the process of making streets sociable. Section 3.3 examines the consensus of how streets are designed to

make them accessible for people. Section 3.4 accounts for the spatial relation of static activities to street accessibility. Section 3.5 discusses the possible reasons why urban designers have insufficiently considered static activities in their designs of sociable and accessible streets. Section 3.6 addresses the range of normative urban design approaches to sociable and accessible streets. Section 3.7 addresses the urban design considerations of the behavioural aspects of people. Section 3.8 examines some empirical (objective) urban design approaches in the formulation of street accessibility which fail to address static activities because of urban growth.

### **3.1. THE RETURN TO SOCIABLE URBAN STREETS**

Amongst criticisms on the deficiency of streets for people, the contemporary sociological debate stands out. The sociological debate on streets for people has a 'humanist' motivation. The absence of the humanist aspects of the sociability of the street was evident in Bennet & Watson's (2002), who criticised that 'again and again pedestrians have had to confront the cars and lorries that threaten them' (p.139). Such a scenario has been an ordinary part of the everyday life of the pedestrian.

Chapter 2 revealed that the urban design exploration and implementation of the many aspects of pedestrian provision on streets was much directed to people's walking activities. Even the 'great' streets scenario envisaged by Jacobs (1993) recommended provision for such activities,

*In deciding the right amount of walking space, it includes, three requirements, which are firstly, the environment in which people are accustomed to which is acknowledged through the culture behaviour of the particular neighbourhood, secondly the reasons for walking and thirdly is the nature of the street (p.272).*

Whyte's *Project of Public Spaces* (1980) regards a particular urban space as sociable where there exists a sense of gathering, a sense of crowding by people and their activities. The incentive to create a crowd has often been said to be the ultimate goal in designing lively public places (Whyte 1988, Stonor 2004). However, how would this 'ideology' be theoretically and practically integrated with the sociability of the particular street? Would it also be likely that a street highly dense with people (i.e. an

over-crowded street) could redirect people on to quieter streets, and hence make the original street less sociable? These questions are dealt with by examining why and how static activities, which are crucial to the design of street sociability, have been insufficiently explored in urban design practice.

### **3.1.1. Crowds and People**

The above leads to an examination of the existence and function of crowds as debated by social psychologists, sociologists, and social ecologists (Argyle 1959, Sommer 1969, Stokols 1972, 1976).

In social ecology, Stokols (1972) reveals that there are four basic lines of behavioural research: two could be of interest to architecture, urban design, and planning. The first includes experiments on the human use of space promoted by Barker (1968), Hall (1959), and Sommer (1969). The second relates to experimental studies directly concerned with the effects of crowding on human behaviour, as reported by Ittelson, Proshansky, and Rivlin (1970).

In studying the effects of density in human population, Stokols (1976) identifies three theoretical perspectives of human crowding: firstly, the 'stimulus overload' (the excessive levels of physical and social stimulation); secondly, 'behavioural constraints' (the existence of individual needs and situational norms - proximity constraints – leading to people establishing the bounds of comfortable interactive distance); and finally, 'ecological orientations' (focuses on the collective adaptation of organisms to their environment). These provide the basis for understanding the antecedents, psychological experience, and behavioural manifestations of people in the environment.

In line with the above, psychologists, sociologists, and anthropologists believe that the formation of crowds, especially in a high-density area (i.e. high ratios of population in a certain boundary of area), could be favourable or non-favourable to people. A crowd could affect people in two main ways. The first is as a social influence on people (Sommer 1969, Argyle 1959, Hall 1976). This means that the social relations between people released from a crowd could influence and hence attract other people to join in a certain situation. The cheering of a crowd of spectators would



normally stimulate an athlete competing in a sports arena (Argyle 1959). The presence of a crowd in this situation would be encouraging (favourable to people) as it facilitates the presence of other people by 'stimulation'. This is why perhaps, at midday or lunchtime, squares and streets can sometimes be overcrowded with people (Hillier 1984, Campos 2000, Whyte 1988). As quoted at the beginning of the chapter, Whyte's (1980) observation confirms that people attract people in streets and public spaces.

On the other hand, sociologists have also found that a crowd could be discouraging to people because it is recognised as causing urban stress (Argyle 1959, Stokols 1976, Fischer 2002). In such cases, the crowd could encourage frequent violations of 'proxemics' or 'personal space' surrounding each person (or that area which a person considers his domain or territory) (Halls 1976, p. 93). More often than expected, this could be the reason why people sit, stand and wait, in all kinds (busy and quiet) and sizes (big and small) of streets in urban areas (Whyte 1988). In this situation, the crowd could be argued to have a negative effect on people as it deters them from the particular situation. The crowd could be inhibitive (non-favourable to people) by over-stimulation (Argyle 1959). People estrange themselves from the crowd and form their individual proxemics (Fischer 1976, 2002, Stokols 1976). This particular sociological finding on this aspect of crowds contradicts the urban design aspiration of designing streets for people. This is because the urban design process generally aims to increase the use of streets by people and their activities (Gehl 1975). Inevitably, this would lead to the formation of crowds in streets. Such effects of crowds, from increasing or decreasing the capacity of streets to the liveliness of streets, have not been explored. This shows that there is an issue of whether the urban design process would primarily aim to fill streets with crowds of people (Stonor 2004). At the centre of this design target, it would seem necessary to examine whether the formation of crowds would function as a 'design stimulant' or a 'non-design stimulant' to people and their activities. Respectively, this means that the effect of a crowd in encouraging or discouraging people in streets would need to be assessed.

The above two effects of crowds on people's behaviour seem to be related to location (these locations might have an impact on the particular activities of people). Relating this to design, the formation of a crowd formed by people manifests its potential for influencing the total occupation level of people in a certain environment. How a

crowd exists on the physical designs of a certain street's environment would need to be investigated. This socio-physical relation between people and the micro environment of the street requires an examination of how a crowd can be accommodated and discouraged in streets.

Consequently, urban designers would need to study how a crowd behaves and affects people and the physical environment in designing street sociability. This suggests the important direction which the process of designing sociable streets for people could take.

### **3.2. CHARACTERISING THE SOCIABILITY OF STREETS THROUGH STATIC ACTIVITIES**

Evidently, people directly and indirectly interact with one another as they stand, chat, watch other people, etc, in streets. These activities signify the normal behaviour of people encountering each other every day, anywhere and everywhere in the city. Their existence is certainly not peculiar to the lay public, let alone to urban designers. It is too easy for urban designers to ignore the sociological and psychological implications of people in these various forms of static activities, and not to consider the possibility of these activities being important design catalysts for creating sociable streets for people.

Whyte's (1980) conjecture on the effect of crowds in encouraging street sociability prompts the question whether this aspect of sociability can be tangibly perceived and measured to represent the intangible aspect of social interaction between people. This shows that, instead of concentrating on people walking, making sociable streets should focus in more detail on whether people performing static activities could positively influence or inhibit other people. Static activities could be more relevant than walking in representing the theoretical and objective aspects of social interaction between people. Thus, the consequent subject of crowds, in the specific presence of static activities in influencing the process of making sociable streets, would need to be explored. The theoretical and practical aspects of crowds would reflect both the social relation of static activities to people, and the socio-physical relation of static activities to the physical designs on the streets.

Figure 3.2 schematically summarises the idea of how the people-based approach of designing a sociable street could be addressed with the inclusion of static activities of people. It is examined closely in the following sections.

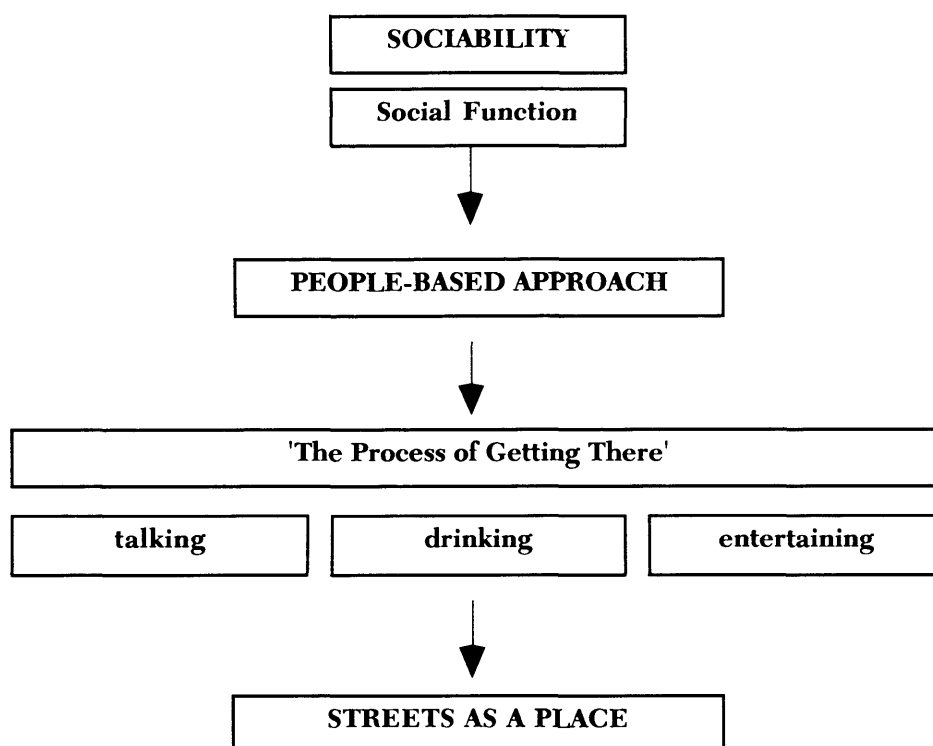


Figure 3.2 The process of making sociable streets as sites for human activities

### 3.2.1. Social Influence of Static Activities in the Sociability of Streets

Goffman (1956) and Bauman (1990) identify the sociological identities of people in the cities as the 'familiar' (local-residents, family, co-workers and neighbours), and 'strangers' (tourists and visitors). These identities account for the different genders and the various age groups of people in cities. Such variations in identity, the presence of social groups with their distinctive subcultures and life-styles enriches the possibilities of enjoying towns and cities by contributing to the variety of experience, which is one of the key qualities of urban areas (Gruen 1964). These identities of people constitute the social relations between people in streets. Goffman in particular addressed the aspect of focused and unfocused interactions in these 'social encounters' within the context of the non-verbal communicative aspects of people in cities (see chapter 2).

Unlike Goffman, psychologists generally believed that people encountering one another (social encounters) were capable of exchanging both verbal and non-verbal communication. Psychologists divided these communications into two categories. Firstly, verbal communication requires people to interact with one another. 'Face-to-face' interaction requires two or more people to be directly involved with one another at the scene. It includes human gestures such as chatting, selling things through vendors, distributing leaflets, entertaining, etc. The second category is non-verbal communication between people. These gestures include gazing, watching, waiting, or reading, etc. These are the behaviours of people which reflect their passive involvement. People share the same space or environment; but they do not directly interact with one another (Argyle 1959, 1967, 1991, Barker, 1968).

In 'The Basis of Sociability', psychologist Michael Argyle (1991) examines sociability in relation to the conditions in which people cooperate within families, classrooms, prisons, etc. He argues that a basic level of communication is needed for any psychological exchange or social interaction to occur, even within encounters that might be competitive or non-cooperative (see figure 3.3). This is equally true of verbal and non-verbal signals, though the two are intricately linked in the process of ongoing social interaction. Non-verbal communication (NVC) signals include facial expression, gazing, various bodily movements, posture, bodily contact, spatial behaviour, clothes, and other aspects of appearance, non-verbal vocalisations, and aromas.

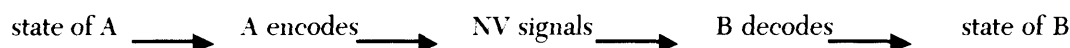


Figure 3.3. 'In order for A to communicate with B, A must send (verbal or non-verbal (NV)) signals which B can understand, and B must be able and willing to attend to them and decode them' (Argyle 1991. p.173)

In design the formation of a crowd of people in the specific execution of static activities has been regarded as important for encouraging social exchange between people. This is due to the nature of crowd, which could exist in various kinds of public places and spaces in the city (Gehl 1975, 1979, 2002). In historic sites or public places, the existence of a crowd implies an increase of positive outdoor space that encourages a good sense of place (De Jong 1979, Larkham 1991). However, urban designers have insufficiently related the intricate theoretical and practical implications of the verbal and non-verbal signals of communication of the crowd of people executing static

activities, which reflect the focused and unfocused interaction between people, to the process of designing streets for people.

The following sections draw attention to some important types of static activities in relation to these aspects of communications and interactions in encouraging or discouraging people in streets.

#### **3.2.1.1. Verbal Communication in the Focused Interaction of Static Activities and People in Streets**

According to Whyte (1980), activities such as distributing leaflets and street selling are often seasonal. The presence of these activities enriches the social aspects of the use of the streets. As these activities can cause streets to become overcrowded, they can either stimulate or discourage social relations between people on the street. Nevertheless, these activities are important. Their occurrence is quite subtle, feeding the diverse social needs of people in streets. They seem to take place depending on the density of people, or the nature of a crowd in a particular street. They normally exist conditioned by the presence of other people or even by the state of the weather (Whyte 1980, Gehl 1975).

These activities reflect the needs of the people in the city, as their activities also bear a commercial aspect. Applications such as news-stands and street cafes can enhance the social life of the street. Whyte, who recognised such activities as having a strong “binding effect”, specifically noted that they invite public involvement and trigger “*triangulation, interaction between strangers prompted by a shared external stimulus*”. Such activities add to the vitality of a place and are good for local commerce, although shop owners and local authorities have often been keen to impose some strict regulation on such activities (Whyte 1988, Poole 1995).

The above implies that a crowd functions as a design stimulus. This happens when a social influence exists, where people tend to follow people (having been stimulated by other people) in a certain situation. Clearly, the active involvement – the direct or focussed interaction of people with one another - demonstrates the verbal communication between the static activities of people in streets (Sommer 1969,

Argyle 1959). However, this association has not been revealed or understood in the design of street sociability.

### **3.2.1.2 Non-verbal Communication in the Unfocused Interaction of Static Activities and People in Streets**

Argyle (1991) points out,

*‘Non-verbal communication, or bodily communication, takes place whenever one person influences another by means of facial expression, tone of voice ... ‘*  
(p. 173)

Like Argyle, most psychologists and sociologists, and social theorists such as Boudrillard, highlight ‘gazing’ as a notable example of non-verbal communication between people. The classic work of Walter Benjamin in his ‘Arcade Project’, studying cafes, restaurants, hairdressers, etc., in a passage on the streets of Paris, noticed ‘gazing’ as a potent activity (Eiland & Mc Laughlin 1999).

In the geographical literature, along with social theorists, ‘gazing’ forms part of the urban culture (Pile & Thrift 2000, Escobar 2000). Crouch (1998) claims that the street has the effect of a spectacle, displayed, and epitomised by the gazer, the ‘flaneur’ in the city. Goffman (1956) believes that ‘gazers’ coexist and feed each other’s presence in public streets.

Similarly, observing familiars and strangers in cities, Goffman’s (1956) ‘Presentation of Self in Everyday Life’, makes specific reference to people watching, which he claimed to be an activity that manifests the passive involvement of people with one another in public places. This activity, he claims, manifests focused and unfocused interaction between people. Primarily, it manifests strong non-verbal communication amongst the range of social encounters in the city. Bauman (1990) found this specific activity to manifest the inherent behaviour of strangers in cities. Has this aspect of people standing, gazing at and watching other people been treated as an important design element for making sociable streets?

Whyte (1980) also observes that different classes of people in public spaces share ‘people watching’ as one of their primary activities. Such a passive involvement of

people with one another raises the important subject of non-verbal communication, the unfocused interaction between people in their everyday stationary activities. However, there are still many more aspects of this communication in the execution of static activities, which have not been included in the process of designing sociable streets (Gehl 1975).

It could be argued that the underlying reason for the coexistence of people in the above scenario is related to the manifestation of the important negative impact of social relations between people in the environment. People neither form nor are attracted to crowds, contrary to Whyte's (1980) claims. This shows that a crowd does not act as a design stimulus when it does not encourage people into a certain area. This normally indicates a low level of static activities in the local environment of individual streets.

### **3.2.2. Socio-physical Influence of Static Activities in the Sociability of Streets**

Whyte pointed out,

*Whatever the attractions of a space, it cannot induce people to come and sit if there is no place to sit* (Whyte, from LeGates & Stout ed. p.114).

The above suggests that people performing static activities could either form a gathering (a crowd) or their own personal spaces in streets. This implies that people could either be influenced or estranged by the presence of other people (Sommer 1969, Lawson 2001, Whyte 1980). These social relations between people in the execution of static activities give an insight into how an individual street could be more occupied than other streets in a particular urban area. This raises the question of how static activities can be accommodated within the physical environment of the street.

People have been observed schmoozing, chatting, waiting in plazas, squares, at junctions or intersections along the street, at bus stops, train stations and in front of the courtyard of big buildings (Whyte 1980, Moudon 1987, Gehl 1987, Hillier 1984, Tibbalds 1992, Moughtin 1993, Lynch 1965). These are the formal and informal static activities of people on streets in residential, suburban, and commercial areas. A

formal instance of these activities could appear in a public space such as a pedestrian mall designed strictly for people and their activities. The mall would normally be equipped with pedestrian amenities such as seating areas, good landscaping, plazas, amphitheatres, etc. These provisions seem to accord with the consensus amongst urban designers who regard streets as a social fact, a social institution for human activities (Guttman 1986, Rudofsky 1977, Rykwert 1986, Moughtin 1992, Jacobs 1993, Levitas 1986).

Observing how people use the physical design elements in the streets could suggest how certain streets would be more occupied than others (Francis 1984, English Heritage 2005). Jacobs (1993) points out, *'Places to relax encourage pedestrians'* (p. 303).

To Jacobs, places to rest are important contributing criteria for making streets great. This reflects an important aspect in determining the quality of the physical designs suitable to some specific types of static activities of people (see chapter 2). Facilities such as drinking fountains and retail shops can add to the richness of the downtown area only if pedestrians are provided with safe places for relaxing over the course of shopping or after a hard day's work. Sitting walls can be provided to accommodate these needs where appropriate (Harrison 1987).

Over time, Whyte (1980) and Gehl (1975) have indirectly influenced much urban design practice for making urban and street spaces pleasant by emphasising static activities in the design of streets for people. This kind of an impact on the planning policy could be seen in the Unitary Development Plan, which specified that the ground floor uses of some streets in central London be strictly for retail (Westminster City Council, 1997). Such policies could be seen implemented on major shopping streets such as Regent Street, Oxford Street, and Charing Cross Road. The question raised is how these uses could be optimised systematically for making streets as settings accessible to people.

One way of looking at the pleasant physical qualities of streets is by observing the character of street-furniture, including street-lamps, benches and kiosks, all of which contribute to a definition of the street scene. Recreation on the streets can open up vistas, adding new sources of monumentality by providing new water and sewerage



infrastructure and enhancing the city's stock of open spaces and parks. This is seen as an essential ingredient in creating a social character for a street (Evenson 1989, Davies 1982). The significance of physical design could also be observed in the regularity of activities existing in streets.

Whyte (1980, 1988) criticised how in the streets of New York, planning policies have encouraged much privatisation of public spaces. In 'Rediscovering City Centres', Whyte (1988) argued that the inefficient use of streets was due to the presence of various businesses without window displays: banks, offices, parking garages and storage areas with blank walls. To Whyte, none of these should have been placed along public streets, as they discourage the presence of people. Whyte argued that food facilities should be provided, more trees be planted, and more seating installed, not only on plazas but on the sidewalks, in front of stores, alongside bus stops and in all sorts of free spaces. These should become a key measure for improving the physical qualities of streets for people. Streets can therefore become more socially comfortable and liveable within the context of contemporary activities (see chapter 2).

Anderson et al (1986) argued slightly different from Whyte. They claimed that,

*people are also unusually generative, adapting their environments to suit their wills and needs. These interactions between ourselves and our physical environments depend on our sociocultural settings and extend through time until both we and our environments are cultural artifacts - the results of human action but not of deliberate design* (ibid. p.267).

To Anderson, people will make their own judgment and manifest themselves into the physical spaces in the environment. Anderson's ecological approach provides a way to examine the interrelations of people, their activities, and the urban environment. He argued, *the physical environment must be seen as both a cultural system entailing - by looking at general city life the general behavioural needs on the street. This physical environment has brought the issue of human interaction in an urban space, that is still vague, though it was mentioned that the use of the street space must be looked as the extended street use between public and private use* (ibid., p. vii).

Caliandro (1986) continued to assess the quality of public and private boundary use of the streets. Two of the criteria he used are referred to as the *place quality* and the *activity setting* of the streets. He noted that the *place quality* helps to enhance the pedestrian space on the street, where the setting for an activity can be encouraged. An example of a specific location is the *transition zone between the private and public realm*, such as at the entrance of a lobby of perhaps a major department store (ibid. p. 184).

Some of the transition zones that have (a) direct contact with streets internally belong to the private but can also act both as private and public; they are the arcades, shopping galleries, and lobbies of department stores. Areas which are clearly for public use are plazas, subway entrances, and pedestrian pavements.

In improving the quality of streets for people, Schumacher (1986) argued *place quality* is achievable when streets or other public open spaces can be understood and used as settings for the activities of people. The street possesses optimum place quality when the user can identify a particular potential for doing his/her activity within the particular space, and therefore personalises that space in a manner similar to the way he/she personalizes his dwelling. *Link* is considered as the ability of streets or other public open spaces to be well understood as a preferred way of getting to a particular goal or set of goals. *These goals may be the functions within buildings, open spaces adjacent to the street or other streets* (p. 149).

Though urban designers might agree with the above, the ecological analysis on the activities of people still lacks an empirical tool that is capable of incorporating the different aspects of relations between people and the physical designs in streets.

### **3.2.2.1. Non-verbal Communication in the Focused and Unfocused Interaction of Static Activities and the Micro Environment of Streets**

The above cases raise general aspects of the physical designs in manifesting direct and indirect interaction in non-verbal communication between people and the micro environment of the street (Rapoport 1976). These physical designs include raised pavements, steps, ledges, windowsills, indents of buildings and sitting walls - all of

which are types of urban elements that can be supportive or conducive to static activities (Whyte 1980, Rapoport 1987). These studies also bring out the unknown impacts of the physical design elements in releasing these aspects of interaction on the crowd of static activities of people in streets. The specific relation between the particular kind of static activity and the particular kind of physical design calls for a detailed exploration of its systematic inventory (Jacobs 1993, Whyte 1980, Gehl 1975, Hillier 1984). This would help the understanding of the effect of the relation between static activities and the particular physical design in encouraging or discouraging people in streets. It brings out the potential of this particular relation as a design stimulant for designing streets for people.

Architects and designers believe that people do not only manifest verbal and non-verbal communication between one another but also non-verbal communication with the environment (Barker 1968, Rapoport 1976). Whilst people may not verbally communicate with one another, they ‘communicate’ with the environment (Lawson 2001). Lawson points out,

*‘Not all behaviour in space involves conversation, but much of our behaviour in space involves communication in some way or other’* (ibid. p.2). He continues to say that, *‘a communication exists between people and the space as they stand in it’* (ibid. p.5).

To create street sociability raises the issue of exploring the effect of the crowd of people in the execution of static activities upon the physical designs in streets through the eyes of architects and urban designers: the built environment professionals.

The above-mentioned scenarios of people chatting or watching manifest the socio-physical relation of static activities to the local environment of the street. The direct or indirect relation of these interactive activities to this particular environment is much affected by the condition of the physical designs as to whether they are well or badly designed for the use of people. Such a relation could also be affected by the non-design aspect of the physical designs available in the environment (see chapter 2). How could the particular relation of the interaction of these activities to the environment be explained within the context of the communication between people and the environment?

According to Hall (1959),

*'Space communicates. The flow and shift of distance between people as they interact with each other is part and parcel of the communication process. The normal conversation distance between strangers illustrates how important are the dynamics of space interaction'*  
(p.175).

The above depicts the general non-verbal communication between people and the environment. How would this aspect of communication relate to the crowd of people in the execution of static activities in streets? Much of this is still unknown and unexplored in the urban design approach to street sociability.

Rapoport (1976, 1977, 1982) was of major importance for designers to understand the relation between people and the environment. Rapoport identified that walking, static and other activities of people are mainly a function of the two important variables, the cultural and the physical. He suggested that the effect of the environment could also be considered in another way: through the notion of habitat selection. Like other organisms, people match perceived characteristics of their environment to certain needs, expectations, norms, desires, and images to try to make the desired characteristics of a particular setting consistent with a particular pattern of activities. He argued that,

*'the relation of people to their environments is the result of complex interactions among cultural, environmental (physical) and perceptual variables. This also applies to the specific set of activities that occur in that environment called streets and specifically, to the pedestrian use of streets'*  
(1987, p.81). In this scenario, Rapoport continued to argue that, *'the use of streets by pedestrians is primarily culturally based, since physical environments do not determine behaviour* (p.83).

In this situation, Rapoport claimed that streets display a high degree of 'cultural specificity'. This could clearly be understood by exploring the way urban inhabitants behave or by generating their everyday pattern of activities in streets when they go shopping, to work, etc. He suggests that the use of streets by pedestrians has to do not only with the accepted levels of physical exertion but also with attitudes towards

sociability. If, however, there is a desire to use streets for walking or ambling or sitting in the promenade or plaza, then certain physical configurations are much more likely to be supportive than others, while those that are antithetical may be so inhibitive as to prevent such behaviour completely. However, the use of even appropriately designed settings depends on the culturally established rules. The direct and indirect interaction between people and the environment is also much influenced and inhibited by the rules generated by individuals (Rapoport 1976, 1987).

General architectural studies relate the above aspect of communication to the effect of direct interaction between the physical designs on the static activities of people (Gehl 1975, Whyte 1980, 1988). Chapter 2 argued that this direct or focused interaction brings out the environmental probabilist aspect of the stationary behaviour of people in the environment. This occurs when one can readily observe people browsing at window displays, etc (Whyte 1988; see more examples in chapter 2). Much of the design aspects of these physical designs are deliberately intended for specific uses. This denotes the occupation of people on these physical designs, some of which could be more probable than others. This subsequently brings out the probability of whether the street in which the particular physical designs exist would be highly dense with static activities, and simultaneously indicates whether the formation of a crowd as a consequence of the presence of these physical designs would act as a design stimulus – encouraging people into the street.

In examining the above in a slightly different way, Rapoport (1977) developed proxemics to describe the territorial concept of the effect of human behaviour upon the environment. This territorial behaviour of people with other people was observed occurring in buildings, public places, and on streets. Earlier, Hall (1959) described proxemics as embodying the spatial pattern of behavioural interaction between people and the environment. This occurs when people use proxemics to define their own spaces. The personal distance people create can suggest the kind of territorial demarcation that they expect other people to respect (Sommer 1969, Rapoport 1977, Lawson 2001).

In observing proxemics at the micro scale of public places or street spaces, one may notice that it is related to a person personalising his/her own space, standing, chatting, or watching other people randomly. This particular kind of personal behaviour of

people in the execution of static activity appears when people use the street to distribute leaflets, sell or entertain at various ad hoc locations on the pavements, eating instead of waiting to withdraw money at cash points, etc. People behaving in such ways do not act according to the street's original use, i.e. the street as a passage for the through-movement of people walking.

Much more of this aspect of indirect or unfocused interaction between people and the environment occurs in streets. When this happens, an aspect of environmental possibilism seemed to have taken place between the static activity executed by the individual person/s and the local environment of the street when using the physical designs on the street based on personal need or cultural behaviour. This becomes much more obvious when the availability of the particular physical designs on the street is not intended (nor designed) for the specific use of the individual person/s. Such a presence of static activities may have also taken place not due to the design of the particular physical design, which may have been poorly designed (as it is not particularly provided to attract people to use it). However, the designs are conducive to static activities (Rapoport 1976, see chapter 2). For creating street sociability, the formation of a crowd does not imply its significance as a design stimulus. A crowd could be discouraging to people, as it may not influence other people into a certain street's environment. Eventually, it may cause a low level of (presence of) static activities in the particular street.

It is important to note some similar observations made by psychologists, sociologists and urban designers about the way people behave and interact with each other as well as with the environment. The social and socio-physical aspects of static activities in streets manifest the true life of a city, where people display indicators of survival and of their cultural needs (Fyfe 1998, Benjamin 1968). The above possibilism and probabilism of the existence of static activities in streets could provide guidance to how street sociability could be 'expected' to be designed. However, the importance of the verbal and non-verbal communication between people, and the non-verbal communication between people and the environment are much to be explored.

### **3.3. THE ACCESSIBILITY OF STREETS**

Whilst it is important to understand how to incorporate the above aspects of sociability into the design of streets for people, it is equally important to understand how to incorporate the accessibility aspect of the streets. Briefly, the thesis defines accessibility as the capacity of the street to accommodate whilst distributing the activities of people from the local (micro) to the global (macro) network of streets in an urban space. This is the spatial function of streets. The thesis postulates that the process of making streets accessible for people would need to integrate static activities within the dynamic activities of people walking and of moving traffic. This process evolves from the decline of the use of streets by people executing static activities. It allows an understanding of how sociable streets could be holistically designed within the urban space, whereby a systematic operational framework for designing lively streets for people could be developed socially as well as spatially. This opens up another dimension in understanding the holistic implication of the social and spatial function of streets for accommodating the simultaneous existences of people's activities within the local and network of streets in the urban space.

### 3.3.1. Generic Accessibility

In transportation, accessibility refers to the ease of reaching destinations. People who are in places that are highly accessible can reach many other activities or destinations quickly; people in inaccessible places can reach fewer places in the same amount of time.

$$Accessibility_i = \sum_j Opportunities_j f(C_{ij})$$

Figure 3.4. Definition of accessibility commonly applied in transport studies (<http://en.wikipedia.org/wiki/Accessibility>, see also Joutsiniemi, A. 2005)

In a traffic analysis zone, a measure that is often used to measure accessibility is as in figure 3.4, where:

i = index of origin zones

j = index of destination zones

f(C<sub>ij</sub>) = function of generalized travel cost (so that nearer (or less expensive) places are weighted more than more remote or more expensive places).

In principle, influenced by the transport system, most built environment practices understand accessibility as the efficiency of streets in distributing the flow (e.g. the volume) of the dynamic movement of people walking, cyclists, and vehicular traffic in and around the city (Buchanan 1963, Jacobs 1993, DOE 1996, Hillier 1996, Urban Task Force 1999). Figure 3.4 is only one of the countless complex mathematical equations of the models used by transport engineers and planners for calculating a balance of the accessibility of people in cities and providing efficient mobility and economical travel.

Of course, relating accessibility in this particular way to people's activities other than their driving their cars, walking, or cycling, would be peculiar. In the local context of an individual street, in which people are observed sitting, talking, and eating, using this equation could be totally irrelevant. Additionally, the new technology of the internet has now enabled people to do their everyday transactions (work, business and shopping) from home, reducing the need to travel to town, and therefore incurring no travel cost at all.

However peculiar or unsuitable the above equation might be, its 'theoretical' aspect has generally been understood and has guided urban designers in designing streets as accessible for people. Arguably, such an approach even now still influences many of the urban design principles for designing streets for people. For instance, the basic principles that urban designers use would account for providing ease of access for people to move about (focussing on the permeability of urban spaces, which would allow people to walk, to have direct visibility, and allow spatial cognition). Much attention has been given to reducing the walking distances of people to the locations of everyday facilities in town centres. Recently, more attention has been paid to promoting pleasant cycling routes within and around the city (<http://www.webtag.org.uk/index.htm>).

### **3.3.2. Interpretations of Accessibility**

*In a definitely human sense, walking is the original form of transport (Marshall 2001, p.61).*



Indeed, walking has long been treated as an original form of transport (Elkington et. al 1973, Hillman & Whalley 1979). As walking is also the least costly form of travel, the most flexible mode of transport, the subject of walking has attracted more recent work based on promoting sustainable transport schemes in urban design. Stephen Marshall (1998, 2001) analysed and promoted the design of street structures, integrating urban design and transport planning principles. His aim was to provide an environmentally friendly urban environment and streets for people in cities.

However much of Marshall's particular studies have been pursued, an intrinsic understanding of how streets could be accessible for people and their activities which are essential for the purpose of their journey, i.e. which are not related to their movement on foot, seems hardly evidenced.

Some of the favourite urban design topics on accessibility also promote the use of facilities for the impaired pedestrian, such as the disabled, the elderly, children, women with buggies, etc. Here, the urban design principle would concentrate on promoting a comfortable walking distance for people travelling from home to town centres. This has been deeply rooted in the garden-city concept, adapted recently through a new urbanism approach.

Peter Calthorpe (1996) promoted the concept of the 'pedestrian pocket' in regional planning. He advocated a comfortable walking distance from house to station so as to ease people out of their cars, and to give them an alternative, which is also convenient and pleasing, as people who live 5 minutes walk from the station can use the train to work.

Obviously, the best way to understand accessibility is by examining the transport, before integrating it into urban design principles. Buchanan (1963) generally defined accessibility as,

... *the general freedom of vehicles to penetrate to destinations and to stop on arrival* (p.16)

When considering people, he went on to specify accessibility as the

... *efficient distribution of people and traffic with an environmental comfortable measurement* (p.40).

Buchanan emphasised that one of the main purposes of designing streets in every town is to give access to the buildings along them. In this way, a comfortable environment can be provided for people in the street. Since the 1970s, environmental awareness has been included as a topic for discussion in the transport, planning and urban design fields (Ritter 1964, Elkington 1976, Anderson et. al 1986, Southworth & Ben-Joseph 1996). Though some authors continue to envisage streets as places of interaction, the guidance they provide for addressing accessibility as a means of travel within the framework of people's static activities in the street is insufficient.

The thesis explores in detail the definition of accessibility by considering certain urban issues related to how people sit, talk, stand, etc, so as to find the appropriate criteria for making streets lively or successfully function for people.

In the report on Town Centre Management by the Department of the Environment (DoE, 1996), accessibility was defined as,

*The ease and convenience of access by different means of travel. The availability of convenient and ample car parking, bus stops, and pedestrian routes are all important considerations in determining accessibility* (p. 34)

On the same lines as Buchanan's argument above, the DoE's guidance on planning the accessibility of streets is also central to providing ease of access to streets for pedestrians and traffic moving in the city. Broadly speaking, this would include providing efficient use of the streets for pedestrians walking, for cycling, and for traffic in the city (Marcus and Francis 1998, DoE 1996).

However, many of the principles have been criticised as unsatisfactory for prioritising people in the streets. Living Streets (2005) criticised the Department of Transport's (2004) guides on accessibility for ignoring walking and the importance of an improved walking environment in order to implement improved access for people. Moreover, the DoE's guide completely ignored the need to address the design of streets so as to be accessible for people sitting, talking, and standing – i.e. for those people performing static activities in streets.

When observing people in streets and in urban spaces, Whyte (1980) noted that, 'people tend to go where people are' (ibid p.64).

Obviously, Whyte understood that people moving and static attract each other in streets. Dynamic and static activities are the essential behaviours of people, forming the life of the street. In principle, Whyte understood that streets should be accessible both for walking and static activities of people. Whyte also realised that such an issue is difficult to resolve due to the complicated development of modern cities. He advocated that,

*All primary spaces shall be accessible to the public at all times, except that for a primary space having only 1 narrow street frontage or a primary space which links 2 streets that are parallel or are within 45 degrees of being parallel, access may be restricted between the hours of 8.00 pm and 8.00 am. Such access may be restricted by the use of horizontal railings and/or vertical members and lockable gates (p. 116)*

Designers would need to understand the kind of spaces which need to be accessible for people. They also need to know what determines the accessible or non-accessible spaces for people. Such restrictions, as indicated by Whyte above, have been continuing to deter people from exercising their right of use of the streets in urban areas.

Lynch and Jackson (1987) noted that a space is "open" only when it is publicly accessible. For example, a fenced-area along a waterfront cannot be classified as an open space: the area may be vacant but it nonetheless prohibits public entry. This raises the question of what defines accessibility within the context of the social activities of people, particularly where primary places should be accessible for them. Perhaps one way of defining accessibility is as stated by Jacobs and Appleyard (1998) in their urban design manifesto:

*"Good environments should be accessible to all. Every citizen is entitled to some minimal levels of identity, control, and opportunity (Le Gates 1998, p.170).*

Designing a good environment in which there is a provision of accessible streets for people is nothing new to urban designers. Francis (1984) noted that designers should use accessibility criteria as guidelines in determining whether a project adds to or detracts from the public landscape of the city.

The critical issue lies in integrating the everyday social activities of people into the physical and spatial conditions of the street, and also into the range of urban conflicts which prevent streets from being fully accessible for people. Such conflicts include safety requirements, providing a healthy environment, the speed and volume of traffic, and the physical layout of the streets.

### **3.4. CHARACTERISING THE ACCESSIBILITY OF STREETS THROUGH STATIC ACTIVITIES**

This thesis addresses the making of accessible streets and the relation between static activities and the global environment of the streets (see diagram 3.1.). Objectively, this making of accessibility aims to integrate static activities within this spatial function of streets. As accessibility is often associated within the spatial function of the street and the whole environment, which consists of people and their every physical aspect, it is argued that the making of accessibility is about understanding the relationship between people's behaviour and the environment of the street.

The making of accessibility focuses on how static activities could be accommodated through the availability, or ease of use, of the physical designs and spatial aspects of the street.

#### **3.4.1. Spatial Influence of Static Activities in the Accessibility of Streets**

Throughout the 1960s, the growing recognition and realisation of pedestrian rights in the use of streets encouraged many views about accessibility, demonstrating a consciousness in the design field leaning towards pedestrian needs as well as to man and his environment (Buchanan 1963, Gruen 1964, Elkington 1976). The views range from psychosocial (Michelson 1975) to ecological (Anderson 1986) and economic (Maitland 1985) implications of pedestrian activities in the urban environment.

Michelson (1980) posited the basic dimensions for analysing the behavioural potential of people in the urban environment. He believed that an understanding of what people can do must be seen in conjunction with what they actually do and what they wish to do. His study found employed women to be much more dependent than men on the public transportation system. Understanding the challenges to society in the

context of contemporary trends in employment and family structure requires knowledge of behavioural potential in the urban environment. Michelson suggested that, *ease in combining employment, child care, and housework with such external obligations as shopping, healthcare, and use of urban facilities is clearly a function of accessibility in terms of space and time* (ibid, p.24).

Thus, when the behavioural potential of people in streets is addressed in relation to shopping activities, it must include people performing static activities, as they have been described as part of the cultural practice, important to the daily social life of an urban society (Cullen 1964, Rudofsky 1969, Lynch 1965, Rykwert 1986, Edenson 1998, Miller 2001). This requires an understanding of how static activities take place in the design of street accessibility.

In human geography, people's spatial behaviour is addressed within the context of 'spatial cognition'. Pedestrians making a choice of route might move here and there within a geographical area (Golledge 2000). As such, some understand spatial behaviour as the spatial interaction between people and the environment.

Generally, studies on spatial behaviour consider the geometrical or morphological properties of streets. These particular studies on spatial behaviour include the temporal dimension of people's activities within the urban environment. The morphological studies of streets simultaneously address their potential to be connected to other streets within the network, and the distance of a direct route which pedestrians are inclined to follow in formulating their journeys from place to place (Cowan 1997, Hillier 1984, 1993, King 1998, Thrift 2000). Most of these studies found that pedestrians tend to follow the shortest and direct route for reaching their destinations.

Though transport studies address people in the local and global contexts of streets, they are still prone to acknowledge the dynamic activities of people. The proposed process of making streets accessible explores the possibility of addressing the spatial behaviour or spatial interaction between people and the environment within the context of how streets might encourage static activities in their local and global network in the urban space.

Whyte (1980) argued that there is a significant relationship between the use of sitting places and pedestrian flow. He noted that the building designs, their elegance and purity, have little relationship to the use of the spaces around them. For instance, he found that many people have to pass by to provide a quota of sitters. This strongly suggests the significant relationship between pedestrian flows and people's execution of static activities. Town centre programs all manifested such a similar relationship (DOE 1996). However, much of the detail and systematic exploration on the relation between static activities taking place within the individual street and network of streets is not available.

Hillier's (1996) space syntax study relates pedestrian movement to the morphology (structure) of the urban space. Hillier, Penn, Hanson, Grajewski & Xu (1992, p. 33) developed the concept of 'Intelligibility', which is defined as the degree of correlation between the connectivity of the lines of sights and their integration value, that is between what can be seen of the line visually and locally and how this relates (or connects) to the importance of the line of sight in the system of the configuration of the area as a whole. The line of sight or connectivity of streets within the system of configuration can be valued empirically by using the axial line tool of analysis. People and computers interpret the axial line as a line defining a 'space'. Axial line analysis, which is applied through computer software called 'Axman', is effectively a computer-aided design program where rather than solid blocks a space is drawn (Space Syntax Manual 1999). A space in this study has a number of global properties. It exists in relationship to the spaces it connects to, which in turn connect to other spaces that are at the same time out of sight. Ultimately, there is a route (formed by the movement of people) from each space to all other spaces in the system. Hence, there is a relationship between each space and its position in the rest of the system. In the syntactic(al) method of analysis, this is called a 'global relationship' (Hillier et. al 1993).

'Axial line analysis' analyses and predicts the flow of movement (which includes pedestrians and traffic) in the global configuration of urban space. The flow of movement is analysed by studying the level of integration from the global scale of urban space and going through the local scale of the area of study (Hillier et. al 1992, Hillier 1996).

In principal, the above theory of the natural movement of space syntax analysis claims that movement is affected by spatial configuration (ibid.). The theory states that the pattern of pedestrian movement in an urban system is primarily generated by the configuration of the urban grid, as pedestrians tend to follow the shortest and most direct routes (Hillier 1996). According to the theory, when streets are highly connected the probability of people occupying them and the chances of the flow of movement are increased. Accordingly, Hillier (1999) defined the 'movement economy' in association with this 'occupation of space' by people moving in the urban space.

Stonor (1998) relates the above to the process of design within the context of the spatial configuration of a city. He points out that the process is one of interdisciplinary design explaining the link between designs and the activities of people in the city. He mentions that space syntax laboratory work has developed new techniques for forecasting customer movement patterns in retail environments, so as to describe the design of retail locations within the context of the activities of people within a certain urban environment. This approach to the design of the retail environment is founded in empirical research, which shows that store layouts have a direct and quantifiable influence on circulation patterns and shopping behaviour.

In another example of space syntax analysis, Hillier's Mansion House Inquiry (1984) found that people distribute themselves sporadically within the grid of an urban space. This particularly raises the question whether the distribution of people based on their flow of movement could be valued in terms of the ability of streets to incorporate static activities when they are to be treated as a setting, or a place that allows people to interact statically. Would it then be possible to generally assume that streets would be highly accessible when they are highly connected to other streets in the configuration of the urban grid? Probably not, as many other studies have found that walking and static activities could be induced by the various attractions in the streets. These attractions include the land uses, the availability of seating spaces, people's psychological behaviour, etc (Pushkarev and Zupan 1975, Gehl 1975, Whyte 1980). It could be argued that highly connected streets may not be highly accessible if there are no attractors because the lack of attractions would reduce the presence of people.

Some studies of this type also concentrate on the relationship between walking activities of people and the formation of static activities in squares, plazas and streets in the city of London (Campos 2000). Hillier also notes that people standing and watching could occur at any suitable 'open space' within the city structure. When people distribute themselves in the city, *not only do they come out in large numbers but also they stop frequently, and where at least certain kinds of open spaces are provided, they stop in them* (1984, p.14). People stop at these spaces more frequently during the rush hour. Hillier found that 17% of people observed en route in the busiest (midday) period are static. He then concludes that the *spatial culture* of the city is essentially a *midday culture* (ibid.). However, Hillier is still exploring why some static spaces work in this sense and yet others completely fail.

According to Hillier (1996), a well or poorly connected space raises or reduces the chance of people moving or stopping in the urban space. It is therefore important to address the potential connectivity of the streets within the urban grid to understand whether there is a need to encourage the movement and visibility aspects of the streets. Much in many of Hillier's studies could quite successfully predict the density of movement within the global context of the environment, but not when relating pedestrian activity to the local context of the urban space. Failing to understand the intricacy of activity within the local condition of the individual streets would limit the understanding of the important spatial implications of static activities in streets. The thesis argues that when addressing the spatial relation between people and the general aspect of the environment, the way in which people behave in a local environment should first be understood.

The above discussions have raised the question whether the connectivity of streets relates to the pattern of the use of the streets by both the static and dynamic activities of people. Could it be assumed that most streets have been designed to be accessible mainly for the dynamic pattern of uses within the urban space? Would designing accessibility have any significance for the distribution of people's social activities within a certain locality in the city? These questions suggest that both walking and static activities would need to be considered when making streets the means of access or accessible for the public scope of activities in the city.



The above studies acknowledge the existence of interaction between people and the environment through addressing the movement activities of people. However, if the movement continues to flow through and is not stopped, their other important relation to the locations where they stop will not be understood. It is therefore important to examine whether the particular street which accommodates a high density of movement would also accommodate a high concentration of people executing static activities. Failing to address this, the design of streets accessibility for people within the local and global contexts of the urban space would be limited.

#### **3.4.2. Non-verbal Communication in the Focused and Unfocused Interaction of Static Activities and the Macro Environment of Streets**

The previous design of street sociability revealed that the occupation of a certain street with people could be encouraged or discouraged by other people as well as by the physical designs in the street. Subsequently, this would affect the sociability level of the specific locale of the individual street. The chances of the environmental possibilism and probabilism aspects of static activities occurring on the physical designs within the local environment of the individual street would inherently provide the opportunity for one street to be more occupied by static activities than others. However, these social and socio-physical relations of static activities to the local environment of the street would also need to be addressed in the global environment. This raises another aspect of non-verbal communication derived from the spatial relation of static activities to the global context of the street environment.

Some studies relate the activities of people to the environment, which is implicated within the local (individual) and global network of streets in the urban space (Moudon 1987, Hillier 1996). This spatial relation is concerned with the level of connectivity of the street to other streets within the network, and the visibility of streets to static activities. For this reason, the making of accessibility addresses the holistic aspect of the locations of the physical designs on which static activities exist, for example, where people gaze at or watch other people on the streets. This allows the activities of people to be addressed simultaneously both in the individual street and within the global network of the streets in the urban space and poses the question of how static activities could be asserted locally and distributed to (the) other global networks of streets in a particular area.

It is important to note that static activities form an integral part of (the) 'social encounters' in streets. They coexist with the dynamic activities of people in the city. Though vaguely defined, Goffman (1956) noted that social encounters already embed within themselves spatial aspects with regard to space and time. For the same reason, Hillier addresses the existence of social encounters within the context of how people move and encounter one another in the local and the global network of streets in the urban space. Unlike Rapoport, Hillier (1996, 1998) addresses broader aspects of both the local and global relations between people and the environment when examining the importance of people's social encounters in the environment of the streets. Hillier (1996, 1984) suggests that the characteristics of people's interactive activities with the physical environment (or space) could be investigated and understood through visual human experience and in relation to the existing built forms and the spatial configuration (which considers the connectivity of streets within the local and global contexts of the urban space).

Much of this non-verbal communication in the spatial relation of static activities coincides with people's socio-physical relation to the environment. This makes an understanding of how crowds and the availability of physical designs affect and attract people essential to the spatial aspect of static activities. It suggests that crowds, static activities and physical designs, with the distance, visibility, and connectivity of the street in the urban space matter in the design of accessible streets for people and explain how the connectivity and visibility of streets are able to simultaneously accommodate and distribute static activities from the local to the global network of streets in the urban space. It also concerns the way static activities interact directly and indirectly with the spatial factors in the street environment, suggesting whether static activities would increase or decrease the number of people in the execution of static activities.

When a street is highly accessible, functioning as a short and direct route for people to walk, highly visible and connected to other streets in the network with a high concentration of static activities of people, it could be argued that the formation of a crowd in such a situation acts as a design stimulus. This formation of a crowd of static activities corresponds to the environment manifesting a direct (focused) interaction with it. A direct interaction is also manifest when an individual street with low connectivity and visibility is also found to be low within static activities.

Nevertheless, if the individual street is highly visible and connected to other streets within the particular area but with a low presence of static activities, the formation of a crowd of static activities does not act as a design stimulus. It manifests an indirect (unfocused) interaction between static activities and the environment, as it does not correspond to such a condition of the particular street. Such a low presence of static activities may suggest that people only use the street as a through street. Such also suggests the existence of proxemics within the static behaviour of the individual person. On a bigger scale than the individual locality of the street environment, the behavioural aspect of proxemics occurs in people waiting at railway stations, sitting in parks, etc. Oscar Newman (1972) addresses proxemics within the context of people behaving in a specific urban neighbourhood as people protect themselves from other people and withdraw their social beings into 'a gated community'.

On the other hand, one could argue that if the connectivity and visibility aspects of a particular street are low with a low concentration of static activities, such a formation of a crowd of static activities does not act as a design stimulus. A direct interaction takes place where this aspect of static activity corresponds to the environment by being less present in the particular condition of the street. However, if the visibility and connectivity of the street are low with a high concentration of static activities, the formation of a crowd of static activities acts as a design stimulus. An indirect interaction takes place between the formation of a crowd of static activities and the street environment. Though the condition of the street does not attract static activities, good designs might help induce the presence of static activities.

### **3.5. URBAN GROWTH IN THE SOCIABILITY AND ACCESSIBILITY OF STREETS**

The discussion thus far reveals that the design of the sociability and accessibility of streets with the inclusion of static activities has been insufficiently explored and understood in urban design practice. Reflecting practical sense on the ground, this section explores the impact of urban growth on the limitation of static activities in the design of the sociability and accessibility of streets in urban areas.

Life in cities, as centres of civilisation, was always dynamic and complex but held within a larger order, where most people continued to live with protection given

them from the local community. Within the city, there exist webs of public thoroughfares, of commercial avenues and market places, of social promenades and meeting places, altogether known now as the 'public realm'. The 'public realm' was placed within a broader structure of civic space expressing larger cultural dimensions and encompassing the grandeur of public ceremonies (Lloyd-Jones, 1998).

Jacobs (1961) criticised modern city life in New York, emphasising that slum areas were livelier and more sociable but unhealthy. This was due to the high-density of the population in these areas. Slum areas reflect the image of a city, which is depicted in the life of its streets. In these areas, one frequently finds food vendors. This is a milieu in which the presence of all kinds of people on the streets is more socially acceptable. More people are observed talking on the street; social interaction is encouraged more in this environment.

Appleyard and Jacobs (1995) warned that density without liveability could return people to the slums of the nineteenth century. Urban designers would need to take caution as slums could easily be developed at the expense of large projects, or even at the expense of public places. Le Gates and Stout (1998) claimed that such fine-grain development could lead to a vast over-scale in cities. This might lead to the loss of public life due to regeneration projects involving out of town development resulting from large-scale privatisation (Minton 2006).

Industrial growth and urbanisation in the nineteenth century created huge areas of slum dwellings where people lived in unhygienic and over-crowded conditions. That slums encourage the decline of potential activities is inevitable. Moreover, planning-led speculation has been recognised as one of the main problems, which mainly focuses on the economic land-use factor and creates a system of unequal access to the social benefits of the city and at the same time tries to control its growth (Greed & Roberts, 1998 p.24). Some scholars comment that this problem has made the city an environment of 'placelessness'. Hence, the city can no longer be considered as a distinct place, a situation when one can no longer recognise one's own space within the city (Relph 1976, Appleyard and Jacobs 1987). This forms part of the key social problem, which has its roots in the street thoroughfares that were built, so causing the fragmentation of the conditions in cities (Pike, B. 1996). Christian Norberg-Schulz

(2000) argues such a case within the context of 'Genius Loci', a sense of place in a locality or city. He argues,

*'The genius loci of a town, thus, ought to comprise the spirit of the locality to get "roots", but it should also gather contents of general interest, contents which have their roots elsewhere, and which have been moved by means of symbolisation. Some of these elements (meanings) are so general that they apply to all places' (p.58).*

In the Urban Design Manifesto, Appleyard and Jacobs (1987) claim that modern cities have become meaningless places where things happen without warning and without the participation of the inhabitants. Even small settlements and villages, which have some direct connection to the land around them, have limited social functions (LeGates & Stout 1998 p.168).

Calthorpe (1998) believes that in differentiating social and environmental form, to quantitatively deliberate the physical and environmental consequences is probably easy, but it is very difficult to postulate their social implications. Social implications could be much discussed within the context of public right. These discussions could include investigating the density of people and the local street structure of a certain neighbourhood: the cultural products, festivals, zoning regulation on the restriction of land use, diversity of land use, services, the comfort-level of the environment, safety, and security, and the suitability of open public places in the city.

Urban designers should therefore attempt to bring a sense of cultural experience into making cities the right places for people. Interaction could then be experienced more deeply and recognised, especially by strangers in the city. Golledge (1998) refers to this sense of culture experience, if performed by groups which portray the culture of that group with certain shared habits and rules of society as a cognitive representation or a cognitive mapping as the *insideness of experience* (ibid. p.31).

Lynch (1987) argues that the growth of cities has caused changes in the social activities of urban society, which has in turn led to rapid changes in the usages and functions of buildings in urban areas. These changes have resulted in the use of land by private management, which then exacerbated social schism, creating urban spaces,

which do not follow a predetermined plan. And, therefore, there has been a serious difficulty in creating spaces which are accessible for people. More specifically, Kostof (1991) argues that these changes have influenced the decision-making process, making public structures into a kind of unconscious urban design in which most of the urban development consequences have not been considered in any detail.

Many of these debates have described the limitations that urban growth has inflicted on the sociability and accessibility of streets. However, they do not deal with the intrinsic aspects of these uses of streets by static activities. An examination is needed of the main factors related to urban growth, which has limited the specific use of the street for static activities.

### **3.5.1. People vs Car Spaces**

*“The modernist intervention as started in American industrial production caused the automobile to destroy urban streets, shopping centres, and neighbourhood stores, and led to the depersonalization of public space to grow with the scale of government” (Gold 1998 p.46).*

A high-density area could cause more traffic congestion and unpleasant conditions on the streets, also constricting pedestrian footpaths. These factors have consequently led to a less enjoyable situation for the walking pedestrian (non-static pedestrian). Street congestion also worsened as a result of the narrow constrictions of thoroughfares, on-street parking and the frequency of intersections which segmented the city for the use of traffic (Institute of Engineering 2002). For these reasons, Gold (1998) believes that each street should be classified according to its function and busy thoroughfares should be isolated from nearby buildings.

A manual; 'On-street Parking: A Guide to Practice', states that the availability of the car, bus and lorry have not only changed the pattern of transport but also social, economic and land use characteristics (Chick 1996). On these matters, Whyte (1974) argues that cars fill vacuums, so that the public can no longer effectively use the streets. In contrast, private space is taxed by the necessity of providing for the many activities that were once shared by people. Consequently, the mobility and private

management of spaces in cities have made streets less connected, more fragmented, and therefore increasingly inaccessible for people (Calthorpe 1998).

The increase in car-ownership has caused the social structure to change. This has led to the growth in leisure as the social activities of urban society. A new approach to urban renewal in tackling this growth was initially to accommodate private cars, providing streets with kerb parking and streets with no parking (pedestrian streets), where the economic position was gauged to see which of these two conditions attracts more people (Chick 1996). This approach might be governed by the density of the local population, where the volume of pedestrian activities might take priority over the number of cars. In some cases, the local authority might be able to easily monitor on-parking regulation. However, the main issue that challenges this approach is providing systematic ease of access where the use of streets for cars could be integrated with the social activities of people in the physical layout of the street.

Ritter (1964) argues that safety is the prime dilemma in integrating people and traffic in cities. This reflects the need to provide safety for children, old people, and people in general, whilst understanding the circulation pattern of traffic in cities. Ritter believes that the primary objective of this integration “*must be to sort out conflicting types of traffic and provide adequately for each in particular, so as to separate pedestrians and vehicles so that both can move freely and safely*” (p. 156). This could be achieved by segregating pedestrians and traffic, whereby the speed of traffic is reduced and humps are provided. Nevertheless, it is not necessarily the best solution (available). Though cars are segregated, they can still block an area. Inherently, an area full of cars would become non-conducive to social activities, affecting the sociological implications of the use of the streets (Bennett 2000).

Buchanan (1963) points out that:

*Assuming that through-traffic could be removed altogether from the street, we would still be inclined to say that further steps would be necessary to secure a satisfactory balance between accessibility and environment. The provision of rear service access to the shops would be extremely expensive though it would enable the street itself to be used for pedestrians only* (p.27)

Buchanan has stated clearly that the use of streets by pedestrians and traffic would need to be balanced in making streets accessible for people. It appears that the use of streets by pedestrians has been interrupted not just by cars, but also by privately managed properties along the streets. However, taking into consideration these two conflicts alone, the thesis argues that it would be difficult to achieve a balance in the use of streets for people and traffic so long as the process of making streets accessible for people is still guided by the conventions within transport practice. This is because transport conventions design streets as the means of access for movement activities, irrespective of people stopping, sitting, and standing in streets.

### **3.5.2. Discouraging Walking**

In the history of Town Planning, British towns were developed in the Middle Ages, where the narrow street layouts at that time were designed as being more suitable for people walking and using horse-drawn carriages. However, along with technological development new British Town Planning emphasises road transportation, and therefore most designs of streets in urban spaces have been governed by the layout of the transportation system (Elkington 1976, Morris 1994).

Buchanan (1963) specifically makes walking an important transport mode for many medium distance movements around town centres. Since then, the legislature has begun to treat walking as an important urban activity in making streets accessible for people. It demands planners and urban designers provide solutions in which people walking are given priority.

In responding to Buchanan, the much later planning schemes emphasised walking activities in order to guide pedestrian-orientated solutions. However, there has been specific criticism of the pavement having narrowed footpath, the surface of which is uncomfortable for people walking (Living Streets 2000).

Lefebvre (1971) claims that some urban conflicts have arisen from the modernity encountered in everyday life which lacks a feeling of community spirit. Community spirit is a necessary quality in town planning, attracting people to walk in residential and other urban areas in cities. Agreeing with Lefebvre, some sociologists also believe this is the case (Bauman 1990, Bennett and Watson 2002). Relating this to the design



of streets, community spirit cannot be achieved if there is a shortage of spaces in streets to be used by people (Appleyard 1987, Engwicht 2000).

Jacobs (1993) suggests that making great streets requires social experience and this is normally associated with places for people to meet up at leisure. Jacobs notes that it is on foot that one can be most intimately involved with the urban environment, with stores, houses, the natural environment, and with people.

Ritter (1964) also believes that the growth of cities has caused them to discourage walking. He went on to argue that any evaluation of an urban space should derive from the value judgment that one acquires from the information gathered from it. For instance, to design the correct capacity for the road traffic that one experiences in the city in some cases it is important to know the number of cars that one should expect in the city centre. This value judgment should be made by evaluating the volume of social activities that one would anticipate in certain urban spaces.

Many of the problems discussed above call for a new urban design paradigm considering the relevant activities of people in the design of street sociability and accessibility. Clearly, many of these approaches related to the problems of urban growth affecting these uses of streets primarily for traffic and pedestrians walking in urban areas. 'Walking' is considered as an important social activity to be incorporated into the design solution for resolving the decline in the use of streets by people. Yet, these solutions have evidently overlooked the presence of static activities of people in streets.

### **3.6. THE NORMATIVE APPROACH IN STREET SOCIABILITY AND ACCESSIBILITY**

Crowded streets with static activities have been portrayed positively encompassing the varied cultural experience and the leisure activities of urban society. On the other hand, a crowd with static activities could cause congestion, slums, 'placelessness', restrictive pedestrian space, changes in human behaviour such as proxemics, etc (see also chapter 2). The urban design process normally deals with aspects of uses of the street by bringing out the social, socio-physical, and spatial implications of people in streets. This section explores the urban design convention (the normative approach)

commonly adopted and implemented in the design of the sociability vis-à-vis accessibility of the street. Urban growth constricting these normative urban design solutions from incorporating static activities in streets will be sought.

### **3.6.1. Normative Approach to Social Aspects of Street Sociability**

Chapter 2 brought out the broad aspects of the conflict on streets which have put some constraints on urban design provisions to ensure sociable streets for people. They are examined in this section with respect to the use of streets by static activities.

#### **3.6.1.1. Normative Approach to Changing Urban Activities in Street Sociability**

Some urban design approaches broadly respond to the conflict raised from the impact of urban growth on people's use of streets by attempting to cater for a changing pattern of uses of the street by the urban inhabitants. This change is addressed through encouraging a mixed function of street activities - embodying the activities of individuals, tourists, local people, businesses, certain social groups, etc. However, street activities have also been negatively affected by changes in the transportation system, whereby the use of streets for pedestrians has been restricted. Consequently, this change in the activities of the urban environment creates conflicts in people's use of streets (Appleyard 1987, Jones et. al 2007).

However, there is also a positive implication arising from the impact of urban growth on its inhabitants. For example, in contemporary streets it is possible to observe people's different cultural experience and range of leisure activities. The previously mentioned necessary, optional, and resultant activities of people as observed by Gehl (1975) seem to enrich this different culture of the inhabitants (see chapter two). Gehl argues that,

*'the changed conditions in urban societies are expressed most clearly by recent changes in street life patterns'* (ibid., p. 52).

The social use of commercial streets today varies in accordance with the changes in the range of modern commercial products to be found there (Fyfe 1998). Although some studies have been made regarding the differences in the patterns of uses of the

streets in residential areas, more examination of these differences in city centres is required.

The change of social uses of streets is also a direct result of the change in the use of historical buildings. This has resulted in mixed land-uses and increasing diversity. Mc Cormac (1997) described the changing pattern of uses as directly related to the use of building. He saw 'a changing function in building recurring over time' (p.307). For example, in the eighteenth century city high-income families inhabited large houses on primary streets, and the mews behind serviced them. Today, the houses might be offices or sometimes a department store with the mews inhabited by commercial or professional, business selling services like photocopying, printing or sandwich bars as primary uses.

These changes greatly influence the different social needs and, consequently, the way people perform their daily activities in the streets. People smoking cigarettes outside buildings (generally occurring due to the policy of banning smoking in the work-place) and the use of mobile phones are two of the most notable changes in the social pattern of activities concerning modern urban lifestyles (see table O in appendix for lists of activities). Other recent developments include the poster advertiser, who was less numerous 20 or 30 years ago. Nowadays, people carrying these advertising signs can be observed on most high streets in urban areas. This is a relatively new activity resulting from a change of social life style in urban society.

Instead of affirming what exists, and adding to it, and making wonderful new things, the modern environment is perceived as having destroyed what was good and not to have replaced it with something better. As a result, a dark cloud hangs over modern urban design because businesses such as distributive warehousing, along with wholesale markets, banks and office buildings, are destructive to the local character simply because they do not primarily serve local people (Mc Cormac 1997). In the restriction of static activities happening in these urban streets, perhaps this question of change could be analysed through the diverse activities of people in streets.

#### **3.6.1.2. Normative Approach to Diversity of Uses and Activities in Street Sociability**

Urban designers have been promoting diversification in the use of streets aiming to serve the changing social needs and activities of urban inhabitants. This diversification caters for the different activities of various groups of people, businesses etc using the streets. Bianchini (1990) argues that the change in society as a result of the emergence of television in the modern world means that people do not go to town-centres as regularly as they used to. Therefore, effort needs to be made to encourage active involvement by people in order to bring them back to the city (Gruen 1964). Diversity of use should be regarded as one of the important methods of increasing pedestrian activities in streets.

Such an approach normally encourages a gathering of cultural diversity, a festival atmosphere, and leisure purposes for people in streets. However, in the process of making sociable streets, there also exists a different kind of buildings now used such as cinemas, theatres, or schools not for their original design purposes. Cinemas have often become restaurants or stores, all of which adds to new interest and new activities in the street.

A variety of uses and activities in an appropriate physical environment could all be associated with the increasing diversity of uses of the streets (Jacobs 1993). Contemporary activities, which bring about new activities in streets, can also be perceived through internet-cafes and various styles of hairdressing salons, etc. These could all be taken in as new variables for understanding how the diversity of uses takes place, and they reflect the contemporary static pattern of activities of people in streets.

Gehl (1975) believes that such diversities are implicated in the passive and active uses of public life in the street. He points out that active urban use is when one participates oneself in the area of action, while passive use is when one is watching television. Gehl writes, '*the conditions offered for long-lasting outdoor activities play the active role*' (Gehl 1987, p.185).

Many such efforts in promoting and implementing the diversity of uses have actually fully conformed to the way people execute static activities in streets. Jackson (1998) notes that the lack of understanding of the problem of streets used for people is due to the privatisation of many public streets. Some refer to this situation as a contested

space use of the high street and shopping malls (of the private space on the high street). This brings into focus the issue of public rights in using the street and reflects the overlapping pattern of uses of the street between individuals and businesses, adding to the conflicts in the use of streets on top of the existing traffic in cities (The Institute of Engineering 2002).

Comfortable resting areas, placed on the public side of buildings and with direct connection to them, influence the making of good, or active streets. Such a diversity of uses has also motivated the appearance of different cultural products from the different activities generated by various types of people in the city. This includes the local workers as well as tourists, and the various different ethnic groups within the cities and reflects the notion of streets as places depicting the local cultural practice of daily urban life (Miller 2000).

Ensuring safety in asserting and maintaining a diversity of activities has proven a difficult balance to achieve. Moreover, the role of streets in the social context includes their being a place of pleasure, anxiety, and domestication as well as resistance, social encounters and political protest: streets have become a hugely diverse environment (Appleyard 1980, Jacobs 1993, Fyfe 1998).

### **3.6.2. The Normative Approach to Socio-physical Aspects of Street Sociability and Accessibility**

The change and diversity of uses in the growth of urban areas seem to require urban designers to understand the intrinsic change in people's activities in streets and this would effect changes in the physical designs in streets. Such changes in physical designs might include an increase in land use such as newsagents, retail window displays, cash point services introduced by banks, cafes that induce fast-food services such as sandwich shops, and modern service facilities such as photocopying and graphic services. The effects of these new uses in increasing or decreasing the specific static activities in the sociability design of the street have not been sufficiently addressed. The following examines the urban design approach commonly undertaken in improving the socio-physical aspects of streets in making them sociable for people.

### 3.6.2.1. The Normative Approach to Physical Designs in Street Sociability and Accessibility



Figure 3.5. Improvement of ramps for making streets accessible to wheelchair users (Photograph Sharifah Mahdzar)

With rising concerns for the socio-physical environment of the street, urban designers continue to prescribe a way of ensuring that people can walk comfortably and pleasantly. One important urban design addition to accessibility has been the installation of ramps on pavements for wheelchair users (Morris, 1974).

The above inevitably include a consideration of road space as sufficient for the use of the pedestrians. The particular urban design interest in the use of road space is directed to its functioning as a public realm. However, the challenges faced in improving the road space for people are primarily in finding way to establish stopping places for people. In establishing these places, the control and limit of space in streets need to be considered. Anderson and Caliendo (1986) argue that a limitation in the use of streets would need to be extended to the 'public and private boundary', which should in future planning become the limit of street-planning control.

Jacobs (1993) believes that,

*Benches help people stay on the street; they invite our presence by permitting rest, conversation, waiting for a friend, passing the time. They help to make community* (p.304)

Other new urban design inputs also appear within the location of public transport in the city. Some designated locations are aimed at shortening the distances pedestrians need to walk in order to get to bus stops, train stations, etc. Antonio (1971) believes that accessibility needs to be defined through a series of origins of activities that would lead to routes and road spaces that are more functional for pedestrians. These series of origins include the stop points, activity nodes, location of bus stops, and any catchment areas where there is a density of people in a certain area. By determining these activity nodes, planners and designers could clearly define the access or linkages of the route of the pedestrians walking about in the city.

However, when dealing with people in static positions in making streets accessible for people, two key issues relating to the physical design of the streets challenge the urban design process. Like the process of making sociable streets with static activities, improving the physical design in streets for people should deal with the issue of promoting mixed land uses, and encouraging a diverse set of street activities by the urban inhabitants. All these call for integration between the design of sociability and the accessibility of streets for people.

Urban designers are aware that one important process for making accessible streets would be to increase the permeability of streets for people to both walk and stop. One way of doing this is to provide barrier free movement in order to allow people to move and stop on the street. The manual on a Responsive Environment offers various approaches for increasing the accessibility of urban and street spaces for people (Bentley et. al 1985, see also figure 3.6). This approach also encourages the shortest and most direct route path for pedestrians by shortening the walking distances and increasing the visibility of streets for pedestrians.

Such an approach to promoting the permeability of streets has been consistent and is favourable to many urban design schemes involving the use of streets for people. Its particular concept has been adopted mainly for resolving the conflicts between the public and private rights of use of streets. This is because of serious concerns over

certain new developments, which have led corporations or building managements to deter street performers, people distributing leaflets, etc, from doing what they do. Whyte (1980) claimed that some new developments restricted people from having access to behaving in their own typical manner on the street. They have instead created the 'dead spaces' in the street environment.

Figure 3.6. Increasing permeability by Bentley et al (1985)

Rudofsky (1969) has been a perpetual critic of street design in the United States, where it is common to build a pavement based on the size of the building and so limit the use of streets for pedestrians. Such an encroachment of private use on public spaces has perhaps occurred because of the rising capitalism in the market economy (Taylor 1999, Minton 2006). This encroachment of privately managed properties has been continually restricting the public from having direct access to the spaces in streets.

In many cases, private management controls the use of building frontages as well as the foot pavements. One way to alleviate this problem is by increasing the footpath provisions for pedestrians. In this way, people could use the streets in the same manner as they do other public spaces, with the same freedoms and constraints.



Nevertheless, not much more space could be created in the streets. This prompts the question of how the permeability of streets incorporates public and private right of use into the physical design of the streets.

Whyte (1980, 1974) puts forward the design features, sittable places and integral seating for people in urban spaces. Apart from making urban spaces lively, Whyte believes that this integral seating is important for accessibility for people. The seating could be directly attached to the building façades or incorporated as part of street furniture and be part of public facilities. For instance, Whyte notes that steps are a dynamic element existing within public streets. They can be incorporated within the entrance to an office complex (see figure 2.12 in chapter 2). Though some believe that steps should be avoided in pedestrian streets (Scottish Enterprise 1997), this physical characteristic can provide integral seating, which would be conducive to people conducting their everyday social activities in streets.

### **3.6.2.2. Normative Approach to Pattern of Land Uses in Street Sociability**

In general, city planning should be responsive to people socially as well as economically. In physical planning, whatever the requirement of the project brief may be, any revitalisation or regeneration project should aim to provide spaces conducive to people conducting their everyday activities. This is feasible through a careful land-use planning scheme, which is normally in the direct control of the local authority. However, there are problems that arise in making the whole land-use scheme work according to this plan.

Kostof (1991) argues that the growth of the city does not normally follow a regular order and does not go according to a predetermined plan. Instead, it depends on landownership and the profit margin of developers. In fulfilling the requirement of determining the relevant types of land uses for an urban development project, urban designers often have to manage this conflict. This would particularly raise the problem of determining the diversity of the pattern of land uses for making streets for people sociable and accessible. Gehl (1975) is aware that designing easy access for people could also require addressing the diversifying use of the street through the provision of significant land uses. This reiterates the need for urban designers to understand the

relevant activities with respect to the physical designs in the land uses so that they might be conducive to people.

Some types of land use could highly influence the presence of static activities. For example, the street cafe has been projected as one of the important land use activities, which needs to be encouraged so as to give more right of access to the public in the use of the streets (Jacobs 1993, Gehl 1975). If this cafe were located indoors, it is difficult to know how significant its impact might be in encouraging people's activities in the area.

Cooper and Carolyn (1998) note that the importance of such pedestrian environments in the city is far greater than simply their aesthetic appeal, or even the affording of an opportunity to spend some time outdoors. Many psychologists also believe that spending time at an outdoor cafe or on a bustling shopping street is more than just a pleasant diversion; it is a necessary element of healthy urban life. Psychologists believe that much of the fear of urban society is directly related to a lack of open public spaces where different groups can interact (Rubenstein 1997, Poppink 2002). However, in many cases, the use of cafe tables and chairs outside on some important streets is still limited (Regent Street Association 1990).

Pedestrian activities could range from walking to crossing the street, looking in shop windows, chatting, and admiring the scene: these are all activities which are affected by the type of land use in the street. For instance, shoppers would browse along window displays. An attractive window display could also allow tourists to take pictures of it. Certainly, urban designers could note that such aspects would increase the number of usages of the street by people.

Whyte (1988) also finds that when a person stops to watch or browse at window displays, he tends to stand for one or two minutes before proceeding to walk on. This implies that window displays would be a pattern of land use that could generate certain usages of the street by static activities of people. This could probably help increase the presence of other types of static activities in many streets, which could previously have been inactively used by people.

Seemingly, most of the normative approaches to encourage the static activities of people aim at improving and integrating the physical designs with the pattern of land uses. Nevertheless, Levy (1998) believes that a large concentration of bars on a block might encourage night-time traffic but do little to attract shoppers during the day. *Some authors also note that the use of land and buildings surrounding streetscape projects make a vital contribution to the success of a scheme. Authorities commissioning projects must contribute and encourage compatible land uses, which will sustain activity within the street* (Scottish Enterprise, 1997, p.15).

Unlike the above, in the geographical study of the 'spatial behaviour' of people in the urban space, King and Golledge (1978) note that an activity approach to urban analysis provides insights into the functioning of urban areas and their spatial structure. This includes a view of the city as a collection of individual activities, actions, reactions, and interactions. They describe urban places in terms of what is going on instead of in terms of quantities of land use of various types.

This reinforces the need to associate the appropriate quantity of land use with the right activities for achieving a balance between attractions and the distribution of static activities of people in the primary, secondary, and tertiary streets within the urban area. It calls for a need to address the spatial aspects of streets in encouraging and distributing the activities of people in the particular area.

### **3.6.3. Normative Approach to Spatial Aspects of Street Accessibility**

The above leads to an investigation of how static activities have been incorporated into the global street environment within the movement of people and traffic in the urban area. The implementation of common urban design measures, which have so far failed to address static activities, need to be sought.

#### **3.6.3.1. Normative Approach to Global Activities of People in Street Accessibility**

Does the configuration of urban space influence static activities, and thus affect the accessibility of streets for the pedestrians? Many of the design measures for making

streets accessible for people aim to answer this specific question. This section explores how urban designers address the spatial aspects of streets normatively and how they integrate the activities of people from the local into the global contexts of streets.

Buchanan points out that,

*Traffic is a function of activities* (Buchanan 1963, p.72)

The preceding section discussed many of the local aspects of the physical planning of the layout of the street, including the provision of footpaths, pedestrian subways, etc. This is the physical intervention commonly adopted in planning practice.

Some broad spatial aspects of the physical planning of cities include preserving conservation areas, designing metropolitan cities, neighbourhood areas, satellite cities, new towns, business districts, etc. Combining these to resolve the conflict between pedestrians and traffic would involve the following normative measures:

- \* providing easy access for an efficient dynamic flow and circulation pattern of traffic and people. Reducing or enhancing the waiting time at traffic lights for people and traffic within the local to global contexts of streets normally serves this purpose.
- \* reducing traffic congestion by increasing the mobility of people travelling into cities.
- \* providing sufficient parking for vehicular traffic.
- \* designing efficient connectivity of streets as links and nodes to town centres, neighbourhood areas, urban villages, etc.

When giving priority to pedestrians for their use of the streets, the following solutions are included:

- \* separating the footpath or grade separation between traffic and pedestrians.
- \* creating pedestrian awareness in traffic free zones and pedestrian streets.
- \* reducing environmental pollution by putting up signs to guide pedestrians and traffic into separate environments, to places less noisy and polluted.
- \* controlling congestion in central areas by having one-way streets, and segregating horizontal and vertical street lanes to separate pedestrians and traffic.
- \* controlling traffic lights by introducing time separation (where a separate flow of vehicles and pedestrians is allowed to cross the street at a certain time).

Despite the above, Ritter (1964) warns that a plan could be very directive to transport development and hence discouraging to people; it could kill a whole area of a town. Making it inaccessible to private cars, just by not providing public transport, could damage the use of streets for people. This leads to the question of how urban designers could help ensure an efficient dynamic flow of traffic while simultaneously ensuring efficient social use of the streets.

For example, the provision of pedestrian islands on a wide street is a physical means that can help pedestrians to cross the street. Others are zebra and pelican crossings and traffic lights. Physical design elements installed and adopted normatively would require an objective evaluation to balance the use of streets by pedestrians and traffic.

At one point search into addressing the issue of pedestrian vehicle conflict in places where there is pedestrian congestion in central areas suggested pedestrianising some of the named streets as one way to separate pedestrians and traffic. Visually, in order to integrate traffic controls with a pleasant walking environment for pedestrians, traffic signs are comprehensively dealt with in the Traffic Signs Regulations and General Directions 1975 and many more (Elkington et. al. 1976 p. 61). The use of humps for traffic calming purposes reduces the speed of vehicle traffic, and they are normally adopted in the spatial aspects of the physical planning of streets.

At first, studies of pedestrian movement mostly examined pedestrian trips, and the provision of footways and footpaths for pedestrian rights of way in the Highway Act. In its broad context, in the late 1950s and early 1960s, the development of policy in the transport and environment spheres had come to a point where local authorities were able to achieve an agreement with building owners so as to create a carriageway for pedestrian access to buildings along the main streets (ibid.).

For solutions to certain environmental issues, the Highway Acts of 1959 empowered local authorities to construct footways if they considered them necessary or desirable for safety. Appleyard's (1970) study on the environmental impact of facilitating the use of streets by people found that there is a need to apply some measurement of their environmental capacity so as to make them less hazardous for pedestrians. In this respect, separating traffic from pedestrians is seen to be the best planning solution in some cases (and also addresses the issues of the safety of the pedestrian) (Ritter

1964). Nevertheless, this solution does not systematically consider the need to complement the spatial planning of streets with the needs of people performing static activities. It still raises the question of how the authorities could provide a more objective approach so that a systematic principle could be applied to assessing the accessibility of contemporary street conditions for accommodating people's social activities.

Most practitioners recognise that commercial land use generates to many urban activities, including the movement pattern of pedestrians and traffic, and inevitably the social activities of people in streets and urban spaces (Pushkarev and Zupan 1975, Hillier 1984, DOE 1996, Stonor 1998). Conventional urban theories tend to explain the patterns of pedestrian and vehicular movement in terms of flows to and from 'attractor' land uses. As such, retail land uses could be considered as the main 'attractor' to generate movement densities in urban areas and commercial streets. The scaling of local pedestrian space to match attraction becomes the main design aim. This is known as the 'attraction theory' of pedestrian movement, where differing degrees of attraction guide movement pattern and densities in the urban space (Pushkarev and Zupan 1975).

Congested streets, which symbolise the vitality of streets with people, continue to draw different responses from different audiences, contradicting the conventional negative presumption of their association with the presence of cars. This raises the question as to whether congestion is the ultimate symbol of modern city life. Jacobs (1965) points out that density (which would imply congestion) without liveability could also influence the unsuccessful function of urban and street spaces. The particular density might easily create slum areas, which would exacerbate the social conditions of city life.

#### **3.6.3.2. Normative Approach to Efficient Pedestrian Flow in Street Accessibility**

Urban practitioners normally analyse the moving activities of pedestrians and traffic to ensure their efficient flow on the street. When addressing the cause of pedestrians, the need to design a coherent pattern of land use was often associated with pedestrians making trips to cities for working, shopping, etc. However, when critically

addressing traffic, it seems that traffic load is the common urban problem, which would work against the coherence of the city. This brings out the issue of the stability of these patterns of coherencies in coordinating pedestrian activities with the need of making accessible streets to people.

According to Buchanan (1963), factors on walking are linked to factors on movement when movement is elaborated in the broad sense of definition and understanding. In this case, walking is considered an integral part of many other matters such as looking in shop windows, admiring the scene, and chatting to people. This implies that the freedom with which a person can walk about and look around could give a very useful insight into the civilised quality of streets in the urban area. It raises the question of how walking could be dealt with as an integral part of something more permanent or tangible, i.e. perceiving it as part of the social activity of urban society. When making streets accessible for people, urban designers would obviously need to design spaces in the street as a means of access that would attract people to the particular street. This could be difficult for ensuring an efficient pedestrian flow as well as encouraging social activities, which could possibly impede the flow of people on the street itself.

Practitioners would normally deal with this kind of question from the macroscopic point of view of prioritising the use of streets for people. This incorporates an urban structure that comprises various patterns of grid, organic, axial, and asymmetric. Understanding the movement within urban streets, with the incorporation of pedestrian activities, is to address the social as well as the economic performance of the streets. Land uses obviously significantly encourage the activities of people in the street. Under immense controls on the use of public streets, urban designers face various difficulties, especially in integrating the freedom people could possibly have in their use of streets with suitable types of land uses.

Stuart (1968) observes that, when integrating social activities for making streets accessible to people, the facilities that are provided for pedestrians are important. These facilities could be analysed from two inter-related perspectives: and as land uses which demand integration in the overall pattern of other urban uses; as transportation links, which, in general, must complement the terminal facilities of other transport modes, which are associated with the urban design composition. Stuart believes that looking at the facilities provided for pedestrians would help local authorities to better

deal with the conflict between traffic and the activities of people in the street (see table O in appendix on the list of facilities which are investigated for analysing the use of streets for static activities).

In coping with the potential demand of the mass activities of people designers would also need to consider the constraints on the use of streets. Some measurements relating to the potential demand for spatial quality consider constraints such as the layout of the street and the creation of footpaths to open spaces, which would help increase the accessibility of urban spaces for people.

Open spaces should be easily connected to the walking path, with consideration of the density of people and their activities in streets (Whyte 1988). Defining open spaces as a series of origins, where a route that accommodates moving and static activities would be combined, will perhaps help better integrate sociability into the accessibility aspect of the street.

### **3.7. BEHAVIOURAL APPROACHES IN STREET SOCIABILITY**

People standing and sitting could lead to the formation of crowds in streets, which tend to encourage or discourage other people entering the particular street. What makes people stop when seeing other people sitting or standing in streets, thus forming such crowds? This section looks at how urban growth restrains some urban design implementations in making sociable streets, and deals with such behavioural aspects of people in streets.

The above question is addressed by referring again to the work of Gehl (1975) and Whyte (1980). Gehl (1987) expresses the fundamental motives for designing spaces for people, as the following:

*[a good urban environment] is where people are able to move about easily and confidently, to be able to linger in cities and building complexes, to be able to take pleasure in spaces, buildings, and city life, and to be able to meet and get together with other people - informally or in more organized fashion (p.53).*

Based on his observation of people in the streets of New York, Whyte (1975) describes Seagram's plaza as "[one of] the best stages" where 'people watching



people' was observed as one of the most notable static activities (figure 3.7). To Lewis Mumford, such a manifestation of activities has made the city like a 'theatre' (Le Gates and Stout 1998).

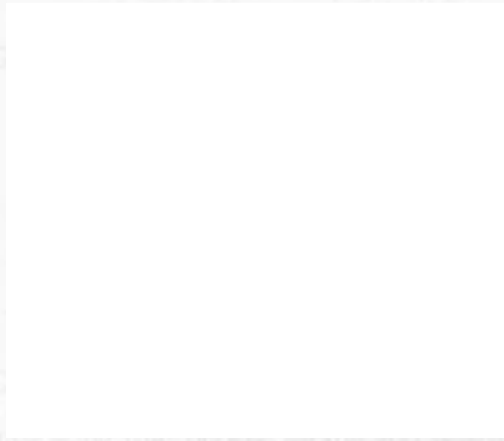


Figure 3.7 People watch people: a type of static activity that induces sociability (source Stein, J. M., 1995, p. 192)

Gehl and Whyte provide the platform of static activities important to design; however, it is important to note that some sociological and psychological issues have been insufficiently integrated in these types of people-based urban design approaches for designing streets for people. Essentially, activities such as sitting, chatting, drinking and entertaining help incorporate more groups of people and more interactive groups. They should be treated as design elements in creating public and street spaces for people.

### 3.7.1. The Sociological and Psychological Behaviour of People in Street Sociability

Simmel (1896) claims that a social product resulting from the social problems in modern society could be addressed within the context of the diverse groups of people that form the new urban culture. Bauman (1990) addresses this diversification within the range of social encounters of people, consisting of strangers, tourists, different locals from different neighbourhoods, and workers in the cities. This raises the question of how streets can be sociable with all these different sociological groups of people, of different ages, genders, etc (Goffman 1956, Argyle 1959, Michelson 1980). The main issue would be how urban designers could develop a basic understanding of the activities of these different groups of people. This can be examined within the context of psychological factors.

Earlier in the chapter, it was explained that in addressing the social relations between people and the environment psychologists have based their debates on verbal and non-verbal communication. How could the designers understand these aspects of behaviour so as to improve the sociable conditions between people?

Gehl (1975) seems to understand the relevance of these questions. He points out:

*In city streets and city centres, social activities will generally be more superficial, with the majority being passive contacts - seeing and hearing a great number of unknown people. But even this limited activity can be very appealing (ibid. p.15).*

Gehl expresses the verbal and non-verbal aspects of the activities of people by indicating that people seeing and hearing implicate themselves as the passive social contacts that they would encounter in the environment. He goes on to argue that,

*Very freely interpreted, a social activity takes place every time two people are together in the same space. To see and hear each other, to meet, is in itself a form of contact, a social activity. The actual meeting, merely being present, is furthermore the seed for other, more comprehensive forms of social activity (ibid. p.15).*

The above suggests that the need of people to see, be seen, to hear and be heard form essential social activities in streets. Gehl later suggests that this form of contact could generate other forms of contact, when people start meeting and talking to other people.

Whyte (1980) describes the sociable conditions of urban space when people use streets as places for exchanging goodbyes, information, etc. The diverse activities derived from the range of the sociological and behavioural aspects of people such as the above would undoubtedly create more such gatherings. This diversity becomes the product of contemporary urban culture. At times, festivals and public events take place in the major streets, encourage this sense of gathering and making streets sociable. Even the regular activities could be part of the cultural practice of the everyday life of urban inhabitants.

Gehl and Whyte seem to tackle the sociable aspect of the environment through their own observations and interpretations of the entire breadth of activities of people. However, there are still many unmentioned kinds of human activity manifesting various forms of social interaction that take place in commercial streets. Examples include taking pictures, and various kinds of street entertainment. These are the daily pedestrian activities regularly happening in contemporary commercial streets. There is plentiful evidence to suggest that activities and social interaction are interrelated with one another. Promoting a sense of gathering, as described by Whyte, and integrating the various activities, as categorised by Gehl, could help urban designers to envisage the theoretical conditions of how sociable streets could be. However, many problems related to urban growth restrain the promotion of this sociability aspect of people's use of streets.

It could be argued that by encouraging a diversity of uses, which could lead to a high density, the possibility of the formation of crowds of static activities in streets could be discouraging to people. Proshansky, Ittelson and Rivlin (1970) conceptualise crowding as a situation in which the presence of other people places restrictions on the individual's range of behavioural choice. Noting that people from different cultures behave differently, Hall (1959) describes how people struggle to enhance their own personal space, creating their own territory. If this is true, crowds could definitely impede other people, just as traffic congests the streets in cities. Gruen (1964) adds that,

*A well functioning city gives each inhabitant a free choice between sociability and privacy, affording him the opportunity to express his human gregariousness in meeting with others, but also the chance to disappear, if that is his desire, in the anonymity of its huge organization (p.21).*

Through approaching the behavioural aspects of people's activities in accordance with the sociological and psychological studies, crowds and proximity have been noted to affect the concentration of people in a particular environment of streets. Gehl and Whyte address this verbal and non-verbal communication of people (walking or static) differently from sociologists and psychologists. Their views give both the positive and negative psychological impacts of the general density of people in attracting or repulsing other people into or from streets. However, their studies are limited in their understanding of the implications for design, of a crowd of people executing

static activities whereby the concentration of these activities could be appropriately catered for in designing sociable streets for people. In particular, when considering the three-dimensional quality – more sitting spaces, etc - without practical tools, the constraints of urban growth cannot be dealt with objectively. This suggests that a more objective tool for encouraging streets to generate a sense of gathering, and to encourage activities to take place, is required (Hillier 1984, Whyte 1980, Appleyard 1980).

### **3.8. QUANTITATIVE APPROACHES IN STREET SOCIABILITY AND ACCESSIBILITY**

The preceding sections reported some awareness amongst designers of the essential empirical aspects of the walking activities of people. However, many such quantitative solutions require further practical information/data/initiatives to instil more objectively walking and stopping spaces for pedestrians.

This section investigates how these solutions empirically incorporate the design of street ease of use for people. It focuses on the need to address this ease of access in an objective manner to make streets sociable and accessible via integrating the static into the walking activities of people. In doing so, the section investigates the urban design approaches which deal practically with the socio-physical and spatial aspects of streets in encouraging and discouraging the walking activities of people in cities (Buchanan 1963, Gunnarsson 2000, 2002). It investigates how the impact of urban growth on these solutions has often failed to address static activities in streets.

#### **3.8.1. Quantitative Approaches to Socio-physical Aspects in Street Sociability and Accessibility**

##### **3.8.1.1. Quantitative Approaches to Physical Designs in the Three Dimensional Quality of Street Sociability and Accessibility**

Caliandro (1986) believes that through associating street activities with suitable types of land use, urban designers could increase the possibility of providing direct access from the footpath. He suggests that designers need first to define the specific land

use as '*goal-directed activities*', located in a position where the accessibility level can be increased (p.163).

Some examples of goal-directed activities and goal-oriented structure, similar to the definition of activity-generating land uses, are supermarkets, cleaners and fast food chains, which are also regarded as attractors to various kinds of human activities in urban areas.



Figure 3.8. Caliandro's image of high-level pedestrian contacts for making streets accessible to people (Caliandro, 1986, p.169).

Whilst noticing the importance of integrating land use in making streets accessible for people, Caliandro also highlights that there is a need to establish and maintain a high level of open pedestrian contact through the adequate provision of services and amenities. This provision characterises many urban streets and the buildings fronting them. Caliandro believes that, whether through conscious planning and design intervention or through gradual accumulation over time, activities and functions that take place in and along streets not only satisfy the necessary community services but also act as social gathering mechanisms. The acceptance of street-related social functions and dependence on them have traditionally been distinguishing characteristics of an urban culture (Caliandro 1986, p.169) (figure 3.8.).

Caliandro raises the question how urban designers would integrate the practical criteria for bringing out the three-dimensional quality of lively sociable and accessible streets for people. Urban designers would need to address the three-dimensional quality of the streets more objectively. This would include the design of accessible stopping places, conducive to the static activities of pedestrians. A clear example is the

design of bus stops for public use, places often considered to be catchment areas within the city.

Like Caliendo, Fruin (1971b) approaches the pedestrian from what he calls the "level of service" design viewpoint. He describes the history of the pedestrian in the city, the behavioural factors involved and the flow characteristics of pedestrians who move as well as execute static activities. The level of service normally includes the integration of pedestrians and vehicles, which leads to the question of access to roads. Fruin believes that in order to benefit the pedestrians, levels of street access could be differentiated by three levels of function, that is the normal multi-functional street (one- or two-way), the pedestrian-priority street (access for servicing only), and pedestrian-only areas (except for emergency vehicles).

Social aspects of the accessibility of public transport include people's travel time, for example young kids going to town just to meet up, which Ritter (1964) describes as, the 'useful and pleasurable associations resulting from repeatedly coming together' (p.65). This shows that travelling time is positively used for more than the purpose of travel, particularly for regular travellers to work, school, shops, etc. It is still unclear, though, how this approach would incorporate travelling time with the design of stopping places.

Gold (1998) states that,

*'The experience of a place is dictated by the design of both streets and buildings' (p.60).*

Gold realises that when designing streets as places experienced by people, they need to be visualised on a broader scale, that is from the aspect of making a good city on a narrow scale, as if zooming into the local condition of the street.

Whyte (1980) notes that the visual quality of sociable urban spaces in reflecting a sense of gathering, from which social activities could be addressed empirically, would need to account for the quality of land use, which needs to be quantified with the physical designs provided. This would enhance the three-dimensional quality of urban spaces within which social activities of people could be objectively understood.

### **3.8.1.2. Quantitative Approach to Land Uses in Street Sociability**

Kevin Lynch states that there are certain deficiencies from the standpoint of normative theory in the effective use of land in an urban space (Stein 1995). This relates to accounting for value and making assumptions in measuring the qualitative properties of land use in an objective manner. In realising some of these qualitative aspects, Lynch adopts a descriptive method of analysis. He introduces the concepts of path, node, landmark, imageability and edge to describe an urban space. These are the five elements which can be used to evaluate the effective use of land patterns for specific urban spaces (Lynch 1965, 1984). However, Lynch does not provide a quantitative method to relate human activities to land use patterns, whereby the quality of these land uses could be objectively evaluated. This limits Lynch's understanding of the social activities which would be relevant to the land use patterns in streets. No empirical value can be established for street sociability or accessibility. This calls for urban designers to understand how to quantify and qualify the land uses in the streets according to the relevant activities of people.

Some of the problems in addressing the land uses are related to the way in which activity generating land uses revitalises certain urban spaces (Haas Klau et. al 1994). These problems mostly concern social uses on street corridors and the problems of the confined activities that can take place there, which are due to issues of the destruction of public space (Celik 1994, Madanipour 1996).

The lists below summarise the practical aspects of the types of land use which are relevant to the quantitative aspects of the use of streets for static activities. These uses are extracted from various resources given in the preceding sections (Rudofsky 1969, Gehl 1975, Pushkarev and Zupan 1975, Whyte 1980, 1988, Moudon 1987, McCormac 1997, Fyfe 1998, Highmore 2002). They provide an insight into the quantitative aspects of land uses to be provided for encouraging static activities in streets in urban areas.

- i. Eatery places, including street cafes, restaurants, sandwich bars, pubs: induce mostly the presence of static activities such as sitting, chatting, and standing. The number of people sitting increases when cafe tables are available outside along the footpath.

ii. Window displays induce mostly the presence of static activities such as browsing and looking at the displayed items. People having conversations over their mobile phones also often use this location.

iii. Newsagents/post card/souvenir vendors: these land uses mostly induce the presence of static activities such as browsing, standing, and chatting.

iv. Cash points/banks: mostly induce the presence of static activities such as standing, chatting, and waiting. Some such locations are frequented by beggars.

v. Other land uses associated with modern city life are various kinds of cinemas, hairdressing salons, print shops and internet cafes. This contemporary type of land use calls for much more exploration within the context of designing the accessibility of streets for people.

### **3.8.2. Quantitative Approach to Spatial Aspects in Street Accessibility**

The three-dimensional quality of streets would also need to be quantitatively understood within their local and global network in the urban space. This brings out the spatial aspect, which is often addressed within the context of making the streets accessible for people. It is examined in this section in relation to the incorporation of static activities in streets. It would firstly consider the length of road (the spatial distance) for designing the most direct and shortest route for pedestrians travelling into and within the city. Secondly, it would incorporate the connectivity and visibility of streets in the urban space.

#### **3.8.2.1. Quantitative Approach to Pedestrian Walking Distances in Street Accessibility**

Buchanan (1963) emphasises that, when designing streets to be accessible for people, *it is important to check their efficiency for providing convenient movement between the various parts of the town, for giving access to the individual premises* (p. 148).

This raises the need to create suitable walking distances for pedestrians. It could also be associated with the need to address the environmental aspects of the street. In this



case, the motive for designing the shortest route path for people to travel aims at having people less exposed to the pollution caused by traffic. Elkington (1976) claims that:

*It is desirable to keep walking distances from pedestrian traffic generators (such as car parks, bus stops, underground or railway stations) as access to pedestrian precincts in approximately a five-minute walking distance. This is about 400-500 m, but it is generally accepted that for older people and younger children, their maximum walking distance is about 200m (p.88).*

Such a trend continues and many authors associate the need to provide accessibility with designing streets to function as the most direct and shortest routes for pedestrians (Ritter 1964, Appleyard 1970, Hills 1984, Jacobs 1993). Some trends recommend “acceptable walking” distances [for people] to public transport stops (Elkington et. al. 1976).

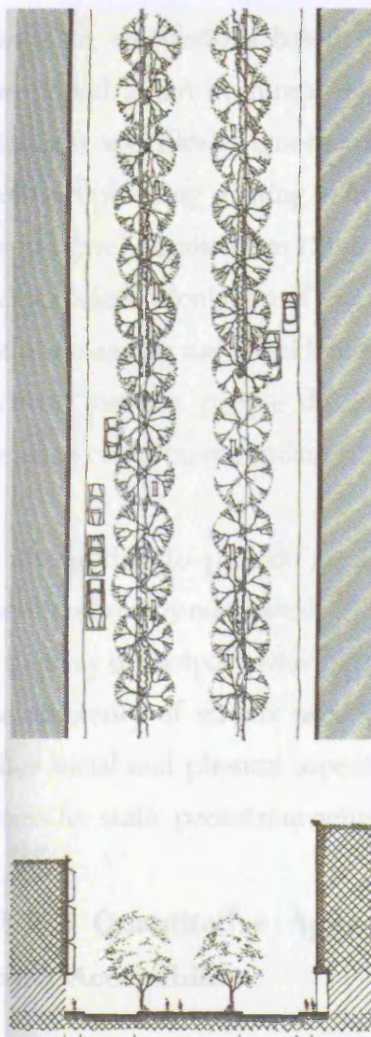


Figure 3.9. Jacob's Observation of Ramblas, Barcelona, as a promenade (1993 p.96)

Jacobs (1993) recommends that to make great streets, the acceptable distance for pedestrians to go to points of public transport would be 300 feet. Jacobs further points out that the Ramblas in Barcelona are specifically designed for walking (figure 3.9). The Ramblas was designed such that the *distances are short enough that a person in the centre can recognize people on the sidewalks or make out what is on offer in the stores even if it is not possible to appraise the goods in the windows* (ibid. p.96).

Space syntax technique measures the accessibility of streets by calculating the shortest journey routes between each link and all of the other links in the network of streets in a certain urban space. The 'shortest' journey routes of pedestrians are represented by defining the routes people walk having the fewest changes of direction between a particular street and other streets in the global area (Space Syntax Manual 1997). This route is partly calculated based on the 'line of sight', the direction in which people travel when the space or environment is visible to them.

However, calculations based on the 'line of sight' principle have been seriously questioned. Apart from representing people's journey, which has to be abstract, these measures specifically ignore many of the conventional metric calculations used in transport planning relating to how people use streets in the city more objectively, i.e. quantitatively evaluations (Steadman 2004). Joutsiniemi (2003, 2005) looked at the metric based calculation of the shortest journey route taken by people when economy and time-saving are considered. When considering the time saving for (making) the shortest journey, people do not travel according to the line of sight and so such a measure could be redundant (ibid.).

In attempting to provide an objective solution, many of these measurements have been too broadly addressed. This consequently raises issues about whether the length of footway or footpath which is used by transport planners as a yardstick for evaluating the efficiency of streets used by people could ensure the provision of access to all other social and physical aspects of streets. Moreover, the issue of providing street access for static pedestrian activities has been very little considered.

### **3.8.2.2. Quantitative Approach to Streets as Connections for People in Street Accessibility**

Equally important to creating the shortest route people would walk is the need to make streets well connected to other streets in the network in the broader scale of the city. The spatial configuration (how streets are connected to each other within the network) of streets could be analysed within the neighbourhood areas, villages, town centres, etc. The surrounding commercial activities normally control most of these areas. For instance, the neighbourhood effect with its social existence can easily be observed in street markets, which are commonly found in the city centres. The neighbourhood effect represents the quality of the shared world, or the community of the urban society. Such a social existence can be observed objectively by addressing the necessary, optional and resultant static activities of people (Gehl 1975). This leads to the need to analyse the local condition of the individual streets, where the socio-physical context (taking into account the social existence of people in various locations in the streets) of the particular social existence can be understood on a smaller scale.

In order to achieve this, cities would need to be connected. Making streets connected for people on a local scale can also connect the global scale of streets within the city. When designing the connectivity of streets in such a way, there is a need to incorporate pedestrians in the traffic circulation within the configuration of the city as a whole (Cowan 1998, Urban Renaissance 1998). Batty (1994) points out that; *Cities are most successful when they establish many connections between activity nodes* (p. 1).

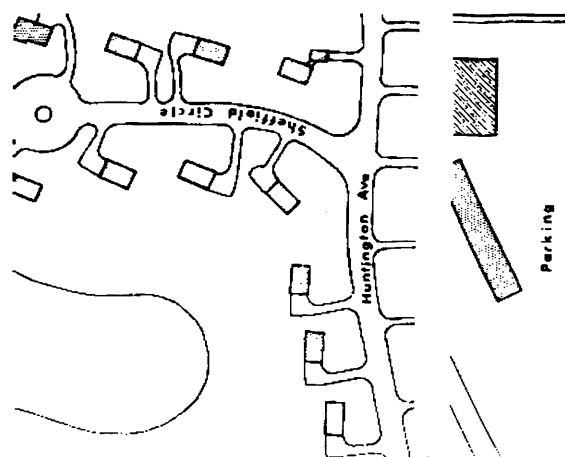


Figure 3.10. Activity Nodes (Caliandro 1986, p.155)

Such connectivity could be addressed in relation to the need to treat streets as settings, rather than as channels, that happen also to distribute the moving pedestrians and traffic. The activity nodes could support the presence of static activities. The

activity nodes could be observed, not just at junctions but also along the layout of the individual streets (figure 3.10.). They could include the physical design elements and land uses in the streets. The occupation of people in these activity nodes, which also randomly (unsystematically) exist in the streets, could make the individual streets look like settings. Broadly speaking, the connectivity of streets could depend on the relationships between the series of origins from where people travel, and the activity nodes, where people position themselves in the streets. This would simultaneously connect streets, and thus the use of streets by people, within the local and global context of the urban space.

The making of streets accessible for static activities raises the question of how urban designers would connect the locations of people within the local to the global network of streets in the urban space. For example, how would designers connect activities such as tourists finding their bearings within the local and global network of streets in a particular urban area? One possible way of doing this would be to provide streets as the direct and shortest route paths for people. When visualising streets as a setting for pedestrians, many urban designers address this question by noting the importance of designing open spaces or stopping places to interplay with people's dynamic activities (Lynch 1984, Guttman 1986, Jacobs 1993, Fyfe 1998). However, most designers have only barely addressed the quantitative aspects of the series of origins, and activity nodes, such as stopping places and open spaces, so making streets accessible for people.

Cowan (1998) argues that places can be segregated, but if the connection between places is good, positive aspects could be the result. Perhaps this is so. Nevertheless, the conventional measures used for connecting streets, especially those provided by the transport planners, have given too much emphasis to traffic. The design of streets as connections was particularly directed at accommodating traffic, which consequently restricted the use of streets for the pedestrians. Besides many other disadvantages, pedestrians have difficulties in crossing the narrowed streets especially when they are highly congested by traffic. It is therefore necessary for urban designers to design well-connected streets which would also stimulate lively social activities.

### **3.9. SUMMARY**

This chapter is themed as Thinking Streets. It investigates the extent to which the theory and practice of sociable and accessible streets are followed. This incorporates static activities within the dynamic activities of people in streets. The chapter first approached the theoretical process of 'rethinking' these social and spatial functions of streets so as to make them lively for people.

Human-orientated sociological and psychological studies can bring a profound social insight into the situations of people in streets. These studies particularly describe the fundamental intricacies of static activities from a behavioural point of view in influencing the design of streets for people. This also helps to explain how the density, the crowd of static activities, forms and disperses within the varied types of people's activities in streets. The chapter further relates the consequent affects of such a crowd of people to the theoretical and practical reasons for people joining or avoiding the streets. This leads to a prediction of whether the crowd of static activities would be a design stimulant or a non-design stimulant (in) influencing the design of street sociability and accessibility (see table 3.1).

An understanding of street sociability helps to answer the question of how streets could be perceived and used as place - a local cultural practice in the daily life of urban inhabitants. This demonstrates the local 'culture' of the commercial streets in urban areas. This use of streets should be seen as urban cultural practice, which manifests various types of static activities. This makes the street more sociable so that more social interaction between people is enabled, rather than the street being merely a conduit for traffic. This simultaneously demonstrates the verbal and non-verbal communication within the focused and unfocused interactions between the static activities of people and other people in streets. When people exhibit these direct and indirect interactions, they manifest important social relations, which are useful in deciding whether such relations would attract or prevent more people from joining or avoiding the crowd of people's static activities in the particular street.

Like Lynch's (1984), the common notion indicated by most theories is to view public spaces three-dimensionally in order to have a proper understanding of what designers mean by a sociable public space. It is hoped that the proposed definition of sociability with the empirical inclusion of static activities demonstrates that place can also be defined in this manner.

In order to attain a more comprehensive understanding of street sociability, it is important to note that it is not possible to fully establish this aspect of streets without considering how static activities react to the physical designs in the local environment. Such a relation implicates the socio-physical (topographical) aspect of the street, which would be conducive to the formation of a crowd of people's static activities and consequently demonstrates the relation between the non-verbal communication of the focused and unfocused interactions of people's static activities and the micro-environment of the particular street. Considering such aspects of static activities could provide guidance in the design of streets, and acknowledges how people react directly and indirectly to the surrounding availability of the physical designs, whether or not they are deliberately designed for people. These reactions of static activities introduce the environmental possibilist and probabilist aspects of static activities in streets (Rapoport 1976).

Subsequently, it was argued that streets would first need to be treated individually before they could be treated as networks (Moudon 1987). This follows the strategy of understanding people's activities in the design of the local condition of the street prior to linking them through the global network of the streets in the particular urban area (*ibid.*). Therefore, the process of making a sociable street would first focus on analysing the micro condition of the individual street. Subsequently, the chapter defined accessibility by simultaneously considering this sociability within the individual street and the network of streets in the area. Inherently, this addresses the relationship between static activities and the spatial (topological) aspect of the streets. This reflects the relation between the non-verbal communication of the focused and unfocused interactions of static activities and the micro environment of the streets.

Highly accessible streets normally consist of a high movement of people. This consequently raises the issue of street connectivity and visibility in the provision of the accessible use of the street for people. The chapter related these aspects of street accessibility to the formation of a crowd of static activities in complementing or impeding the movement activities of people in streets. This led to an understanding of the significance of the crowd of static activities in attracting or preventing other people in the process of making streets accessible for people.

In understanding the above more practically, the chapter noted various factors related to the impact of urban growth on the overall decline of the social use of the streets in urban areas. It then established that the lack of a detailed exploration of the essential static activities of people has been affected by the generation of traffic congestion and the privatisation of the public realm – those factors which have been discouraging to the walking activities of people in the streets in cities. The chapter examined these impacts, which have impinged on the use of streets for static activities and limited the process of making them sociable and accessible for people.

Drawing from the conflicts in urban growth, various authors note the important range of activities that are taking place because of the changes in the social use of streets by urban inhabitants (Gehl 1975, Whyte 1980, Mc Cormac 1997). This then prompts user diversity as significant for incorporating people's static activities in the process of making streets sociable for people. These normative approaches to improving streets for people are then examined in relation to providing socio-physical and spatial uses of the streets for static activities.

Commonly, increasing street permeability for public and private use aims to improve the physical spaces in streets for people. It is accomplished by footpath provisions and the appropriate length of road which would be suitable for the walking activities of people in the street. Consequently, the common approach to social use in street accessibility regards streets as the most direct and shortest routes for pedestrians. This provision aims at designing streets as easy access for people moving from one place to another in the city. Streets are also designed to ensure efficient pedestrian flow in dealing with congestion caused by traffic, parking availability and waiting time at traffic lights. The connectivity and visibility of streets are addressed by street junctions being designed to be directly accessible to plazas and squares to create a sense of gathering amongst people.

Reflecting on the above, the author perceived that the sociological and psychological behaviour of static activities would need to be addressed in more detail for a more comprehensive understanding of people's essential activities in making streets sociable. This raised the need to understand the intricate types of static activities of people of different gender, age and culture, all of which are relevant to the design of streets in the urban environment.

Some clear quantitative (objective) urban design approaches have been adopted in the design of street sociability and accessibility. This led the chapter to investigate some urban design measures which practically provide physical spaces in streets to attract people more objectively, eg street cafés, and bus stops in the catchment areas to give ease of access to pedestrians. Some trends in dealing with these spatial aspects of the street provide suitable walking distances, creating the shortest journey, and increasing the connectivity of streets within the network in a particular area. The following issues were raised;

i) the approach to the social use of the streets within the context of accessibility has been closely associated with the walking environment, though was directed to the use of the streets for traffic instead of people in stationary positions.

ii) the sociological and psychological aspects of static activities have been insufficiently considered in the conventional urban design process of making streets accessible for people.



	Density of static activities	Behavioural effect of crowd on the density of static activities
<b>SOCIAL RELATION</b> Effect of crowd on people		
Social influence	High density of static activities	The crowd acts as design stimulant as it attracts people. When people are attracted to the crowd they establish verbal communication, implying a direct relation to or focussed interaction with static activities
Social disturbance (formation of personal space, proxemics)	Low density of static activities	The crowd acts as non-design stimulant when its existence does not attract people. When people avoid the crowd they establish a non-verbal communication, implying their indirect relation to or unfocussed interaction with static activities
<b>SOCIO-PHYSICAL RELATION</b> Effect of crowd on physical designs in a local environment of streets		
Good design	High density of static activities	The crowd acts as a design stimulant establishing a direct relation with the good quality of the physical designs
	Low density of static activities	The crowd acts as a non-design stimulant establishing an indirect relation with the good quality of the physical designs
Bad design	High density of static activities	The crowd acts as a design stimulant establishing an indirect relation with the bad quality of the physical designs
	Low density of static activities	The crowd acts as a non-design stimulant establishing a direct relation with the bad quality of the physical designs
<b>SPATIAL RELATION</b> Effect of crowd on a global environment of streets		
High connectivity	High density of static activities	The crowd acts as a design stimulant establishing a direct relation with the high connectivity level of the street
	Low density of static activities	The crowd acts as a non-design stimulant establishing an indirect relation with the high connectivity level of the street
Low connectivity	High density of static activities	The crowd acts as a design stimulant establishing an indirect relation with the low connectivity level of the street
	Low density of static activities	The crowd acts as a non-design stimulant establishing a direct relation with the low connectivity level of the street

Table 3.1. Direct and indirect behavioural relation between the social, socio-physical and spatial effects of crowd (as a design or non-design stimulation) on the density level of static activities in streets.

# CHAPTER 4

## METHODOLOGY AND CASE STUDIES

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*“One of the troubles with most pedestrian surveys is that they focus almost wholly on the pedestrian as a transport unit – and how he gets from A to B. But study the social behaviour of the pedestrian and you find that a significant part of his activity is not moving, but standing, talking and looking”*

(William H. Whyte, 1980)

*The economist sees the resolution of these different demands in terms of compromise and trade-offs, but the urban designer and planner can offer creative ingenuity and the ability to serve several group needs within a limited space. By designing the street to be used to capacity, each group can be attracted by its particular amenities; new functions and meanings can be imagined that will return the street to the center of public life and make it once more the arena for supporting the culture of cities*

(Appleyard 1987, p.12)

The previous chapters have noted the various urban factors which have hindered many urban streets from functioning socially sufficient (Anderson 1986, Moudon 1987, Francis 1984, Hill 1984, Fyfe et. al 1996, Bennett and Watson 2002). Whyte specifically related these problems raised in the urban development to urban design measures which lack focus on the ‘social behaviour of people’, which Whyte regards as pedestrian static activities. This was evident in many of Whyte’s observations which find inadequate spaces for people sitting, standing and stopping, a limited number of pedestrian crossings, the nuisance of obstructed pavements, etc (Whyte 1980). Appleyard additionally supported and related such shortages to the inability of urban measures to satisfy and balance the varied demands of street users.

Although their limited usages for people have been improved, the methods of implementation in many of these streets have not adequately integrated the social with the spatial. Haas Klau (1999) claimed that,

*.. as the typical boulevards have both wide pavements and wide carriageway, they are still the only major urban streets where a mixture of cars and pedestrians can function well together (p.17).*

The above raises these important questions: could there be a balance of uses or 'trade-offs', as suggested by Appleyard, between the social and spatial functions of streets? What are the desired aspects of people's activities in providing sociability and accessibility in the street?

This chapter develops a theoretical and practical operational framework for the proposed method for the thesis. This framework measures the liveliness of streets (briefly outlined in chapter 1, see section 1.4). It focuses on analysing the relevant factors influencing the streets used by people sitting, standing, chatting, etc. This framework includes the sociological and psychological theories of these social behaviours of people.

Firstly, in order to develop the theoretical aspect of the proposed framework, the thesis considers Goffman's (1956) two important theoretical concepts, the focused and unfocused interaction in people's behaviour and activities. The thesis accepts and relates these interactions to the way in which static activities indicate the processes of interactions which occur between people and between people and the environment. The framework explains these interactions within the relations between static activities and people, physical designs, and the spatial properties of the street (see chapter 2 and 3). The theoretical relations of these properties are further expressed in the streets' sociability and accessibility.

The framework examines the past and present methods of analyses of the function of the streets in the everyday life of people in urban areas. It sets out parameters to a general understanding of the activities of (the) pedestrians and the above interactions surrounding the urban street network. It projects the potential criteria for streets to function as better places, nodes, plazas, or meeting places for people, and not just as linkages within the city fabric.

The theoretical aspect of the framework is then provided with the calculations, which quantitatively measure the sociability and accessibility of the streets. These functions are evaluated for their ability to accommodate and distribute static and dynamic activities in streets (see chapter 3). The calculations ultimately focus on estimating and predicting an appropriate balance between these functions of the streets.

This chapter consists of two parts Part I, *Methodology*, is divided into the following sections. Section 4.1 explains the development of the theoretical and practical aspects of the framework. Section 4.2 gives the research variables. Section 4.3 explains the process of collecting the data, and section 4.4 how the data is processed. Part II, *Case Study*, consists of the preliminary observation (section 4.5) and the case study (section 4.6). Section 4.7 summarises the chapter.

## **Part I – Methodology**

### **4.1. SYNTHESISING THE SOCIAL, SOCIO-PHYSICAL AND SPATIAL RELATIONS OF STATIC ACTIVITIES IN STREETS**

Chapter 2 (section 2.6) presented evidence of static activities in the social, socio-physical, and spatial aspects of streets. The urban design technique of designing streets for people has barely acknowledged these implications of static activities in the daily function of streets. Such properties of static activities form the key variables to the proposed framework of analysis. The interrelations between the variables are synthesised and used to measure the sociability and accessibility of the street. In turn, this measure is used to evaluate the liveliness of streets for people. Figure 4.1 shows the overall theoretical development of the proposed framework.

Such a synthesis considers the dialectic, i.e. the oppositional forces between the sociability and accessibility of streets. This dialectic emphasises the need for a framework which accommodates as well as distributes static activities within the spatial function of streets (which are normally channels for distributing (the) moving pedestrians and traffic).

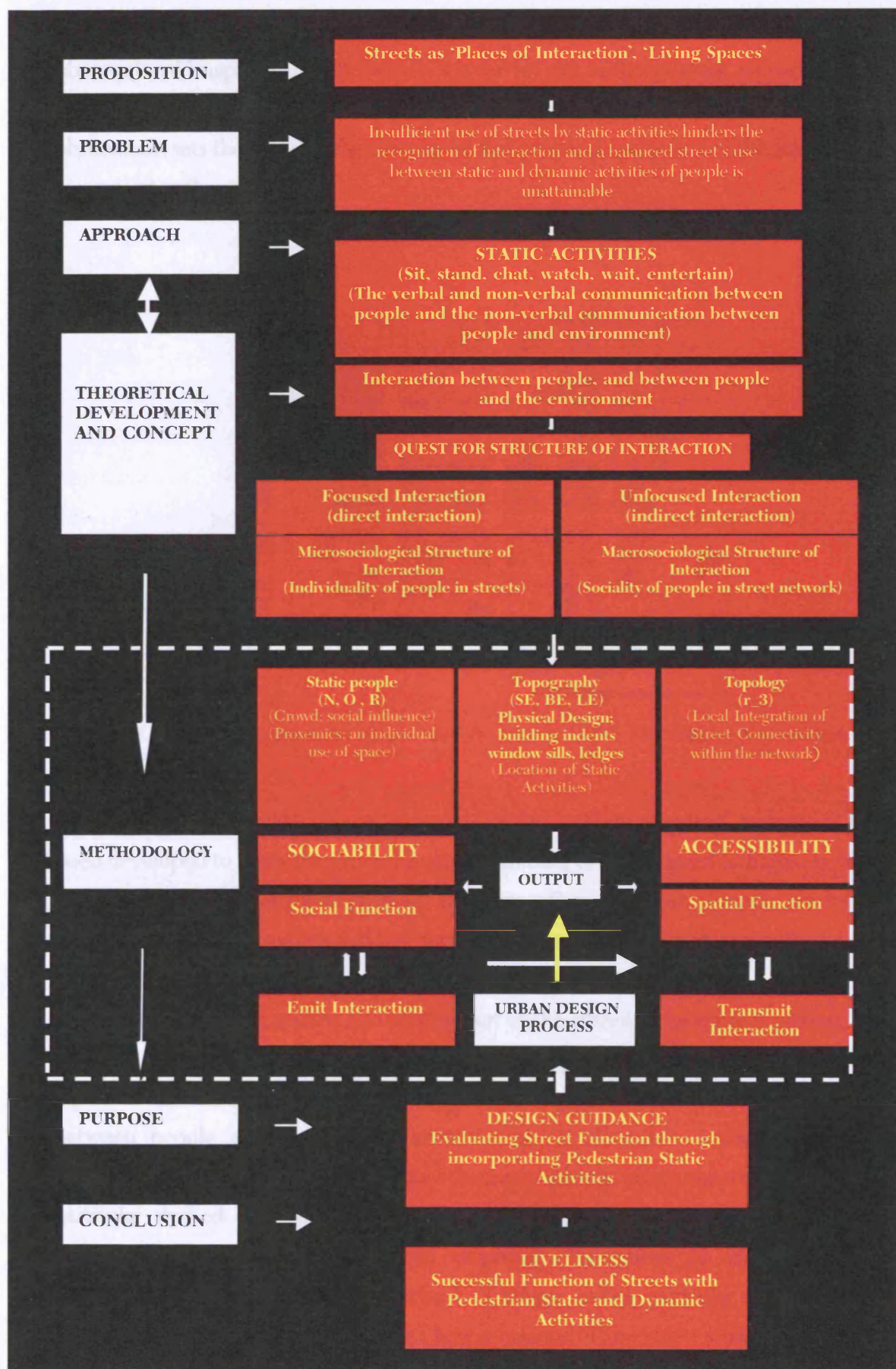


Figure 4.1. An overall theoretical development of the methodology (see also Appendix A; winning entry for a Poster by Students in Space Syntax 4<sup>th</sup> International Symposium 2003, London)

In synthesising the above variables into the framework, firstly a preliminary observational 'snapshot' of static activities is carried out in the primary, secondary, and tertiary streets (Francis 1984, Space Syntax Manual 1984) (see section 4.3). This observation sets the basis for the theoretical and practical operations of the framework in processing the variables.

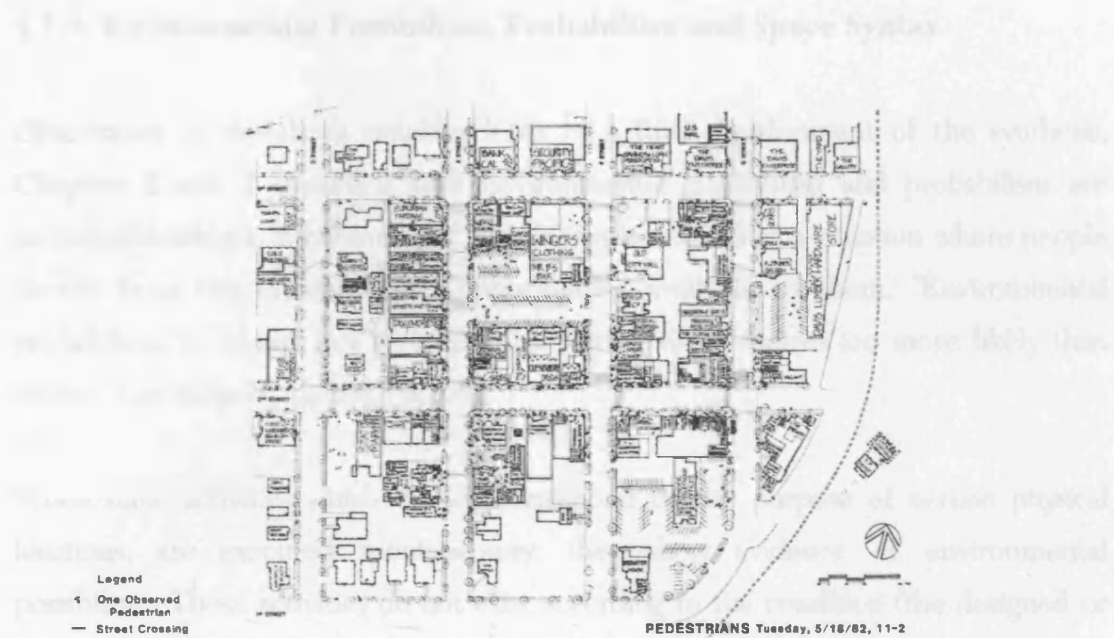


Figure 4.2. 'Activity mapping' technique used by Francis (1984) for mapping the activities of people in public places.

This snapshot observation, otherwise known as the 'activity mapping' technique, has been developed to allow the ground floors of building to be designed in harmony with the existing street uses and physical elements (Francis 1984). Francis used this technique in order to understand the 'social life' of an urban space (figure 4.2).

This method has been applied and used as part of the planning assessment process for analysing people's activities in urban spaces (Berk 1976). However, the theoretical aspect of this technique emphasises only a one-way process of interaction, that is between people and the physical environment. It does not consider how the psychological or sociological interactions between people affect the conditions of a particular studied environment (Holahan 1978, Terrence 1979). In addition, the technique does not provide detailed empirical observations on static activities appropriating the local and global network of streets in the particular area. Lacking such details limits an understanding of how a balance of the street's use for people's static and dynamic activities could be achieved. Nonetheless, this observation can offer



a preliminary insight into the specific type of activities and the locations in which the activities exist. Moreover, these activities and the physical locations could then be quantified and developed empirically for analysing the detailed use of streets by the static activities of people.

#### **4.1.1. Environmental Possibilism, Probabilism and Space Syntax**

Observation of the above variables leads to a final development of the synthesis. Chapters 2 and 3 explained how environmental possibilism and probabilism are executed in streets. Environmental possibilism is defined as a situation where people choose from the environmental opportunities available to them. 'Environmental probabilism, is, where, in a given physical setting some choices are more likely than others' (Carmona et. al, 2003, p.106).

When static activities which do not correspond to the purpose of certain physical locations, are executed spontaneously, they show evidence of environmental possibilism. These activities do not exist according to the condition (the designed or non-designed properties) of the physical spaces. Instead, people shape the spaces in the environment according to their own needs, culture, etc as they see possible (Rapoport 1976). It is argued that static activities in this situation exist independently from the function of the environment, as the environment may or may not be designed for the purposes of uses regarding these activities. However, when static activities directly respond to the purpose of the designed environment, they show signs of environmental probabilism. Designers design the environment and people's occupancy of one environment is more probable than that of others. The environment shapes people's activities and the thesis argues that static activities exist depending on the condition of the design purpose of the environment.

The proposed framework simultaneously connects the theoretical relations of static activities to the above environmental conditions. It suggests that environmental possibilism will add a different dimension to the probabilism of use of the street. Practically, both environments form the 'topography' of the physical spaces that are inhabited by people in streets. These environments provide the choices that accommodate the formal and informal behaviour of static activities in the environment. The proposed framework addresses these choices, which neither

determine nor prescribe, but rather synthesise the possibilism and probabilism of the way people execute static activities in streets.

This final development of the synthesis integrates the above theoretical circumstances of static activities in the environment into the spatial function of streets. It addresses static activities in the whole network of streets in a particular urban space.

‘Natural movement’ has become known as a formal and empirical phenomenon through the application of the new ‘Space Syntax’ technique, which analyses the configuration of the local and global structure of the urban grid and buildings. This theory, which is based on the topology of space, is associated with ‘Axman’ software or ‘axial line analysis’. Axman analysis describes and analyses the pattern of urban spaces used by people. This tool provides an objective analysis of social environments, describing how people move by simulating the urban environment on the computer (Hillier et.al 1992, Space Syntax Manual 1984).

Scenarios such as people sitting, standing, distributing leaflets, and holding signboards on a busy street, reflect other kinds of activities that take place, especially on commercial streets. Space syntax analysis of spatial configuration with static activities has been done on squares (Campos 1999, Cutini 2003, 2005). Broadgate uses a similar principle for modern developments, locating the public spaces in such a way that they are well integrated in the grid both at local levels and with connectors of the city (Campos 1999). Nevertheless, studies on axial line analysis, which relates static activities to the dynamic aspects of people in streets, are still insufficient (Hillier 1984).

The proposed framework addresses the effect of the urban grid (according to axial line analysis) on the static activities of people. It synthesises both the environmental possibilism and probabilism of the choices people make in executing static activities in streets with the axial line analysis of particular streets. Practically, the framework combines the empirical observations of static activities, the physical locations, and the empirical axial line (integration) value of the street. These combinations account for the ‘topography’ and ‘topology’ of static activities in streets. Further, they facilitate a holistic theoretical framework of analysis, relating the presence of static activities within the locality of individual streets to their global network in an area.



## 4.2. RESEARCH VARIABLES

Dependant and independent variables are identified below (see also figure 4.4).

### 4.2.1. Dependant Variables

#### i. Static Activities; Social variable (V\_1)

The dependant variables consist of the aggregation of the *Necessary*, *Optional*, and *Resultant* activities distributed (NOR) within the studied area. These activities are referred to as the social variables. The *necessary activities* (*N activity*) include browsing, tourists reading maps, and waiting (these being the activities of pedestrians who act individually or collectively as a group), smoking cigarettes and using mobile phones. People using mobile phones are contemporary activities of urban society today, and not typical of previous decades. The *optional activities* (*O activity*) include people eating, drinking, taking pictures, and reading (the occurrence of these activities depends on the physical environment). The *resultant activities* (*R activity*) include people chatting, watching, entertaining, street vendors selling goods and people distributing advertising leaflets (these activities occur because of the presence of other people) (Gehl 1975, see table O in Appendix B for detailed static activities).

The thesis notes that the above static activities are not the only form of social interaction which induces street sociability. Along with static activities it has been observed that there is the potential of a co-existence between moving and stationary activities - both of which are important variables stimulating social interaction between people. The dynamic aspect of social interaction is apparent, for example, when people walk whilst talking to each other. Though they are not explicitly included in Gehl's categories of necessary, optional and resultant activities, they are inherently included

Space syntax analyses has also only indirectly expressed this aspect of interaction in studies of pedestrians' moving behaviour. Though this is the case, the thesis argues that the dynamic interaction between people has been indirectly included and generally explored in the various urban studies on movement as previously discussed

(see chapter 2 and 3). That said, the thesis asserts static activities as the predominant behaviour in the interaction between people in streets and these activities are to be treated as important urban variables in making streets lively for people.

#### **4.2.2. Independent Variables**

##### **ii. Physical Designs or Socio-physical Variables (V\_2).**

Physical designs are the activity settings - the actual physical locations in which static activities occur. The physical designs form the topography of the streets, and they are referred to as the socio-physical variables. Such a term is used to reflect the social and physical manifestation of static activities in streets. Three main categories of socio-physical variables are described below (see also table O for detailed physical locations in these main categories).

a. The Street Element (SE): there are three types of street element: 'pavement-edges', 'public facilities' and the 'end of streets'. Pavement-edges include street edges, street barriers, street fences, and street walls. Public facilities include physical items such as lamp-posts, phone-booths, bins, and post-boxes. The ends of streets include junctions and intersections.

b. The Building Element (BE): these are physical designs which are related to building facades. They consist of building indents, ledges, window-sills, flower-boxes, sitting walls, pillar edges, basement fences, and public and private entrance items, which include entrances, steps, vestibules and porches.

c. The Land use Element (LE): the four physical designs in these land use elements include the window displays, newsagents, cash-points and eating places (street cafes, pubs, sandwich bars, etc.). These are related to retail uses in the street. As retail uses, they are also the 'retail attractors' to pedestrian movements as well as to pedestrian static (Pushkarev and Zupan 1974). However, this thesis does not consider these retail uses as the retail attractors to pedestrian movement, but instead, with the physical design elements on their frontages, as retail attractors to pedestrian static activities.

### **iii. Local Integration Value or Syntactical Variable (V\_3)**

This is the integration value,  $r_3$  of the street, which is referred to as the spatial variable. This is a syntactical measure of the local spatial configuration of the streets in accordance with axial line analysis in Space Syntax methodology (see section 5.1.3 in chapter 5, which shows the local axial map analysis with the  $r_3$  value of the streets).

## **4.3. COLLECTING DATA**

### **4.3.1. Selecting a Sample of Streets**

The case study Regent Street, London, and the several surrounding streets within its vicinity is selected based on the identification of an area with a high proportion of retail uses (City of Westminster Unitary Development Plan 1996, see map of observation in Part II of this chapter). Described below are the chosen samples of streets, which exhibit a mixed pattern of land use(s):

- commercial/retail
- commercial/hotel residential
- commercial/institutional residential
- commercial/office
- commercial/private residential

These streets are categorised as primary, secondary, and tertiary. Primary streets accommodate the highest capacity of traffic within the area of study. They are those with a high distribution (volume) of movement of both pedestrians and traffic. Secondary streets consist of a medium volume of pedestrians and traffic. Tertiary streets maintain the lowest capacity of pedestrians and traffic (Elkington, McGlynn & Roberts, 1976, Appleyard 1980). These streets are investigated for the following reasons:

- To understand the relationship between the existing conditions of local and global networks of streets and the different (or mixed) pattern of land uses in an urban area.
- To understand the pattern of the use of streets by static activities with the physical environment of the streets.

- To understand the relationship between the use of streets by static activities and the flow of dynamic (the movement of people and traffic) activities in the primary, secondary and tertiary streets in the studied area.

#### **4.3.2. Observing Street Spaces Used for Static Activities**

Each aspect of static activity is mapped into the selected streets. The key pedestrian activities, the necessary, optional, and resultant behaviours (some discreet behaviours are noted for reference) in the streets in the studied area are identified.

Next, the locations where static activities occur are mapped into the layout of streets. This distinguishes the key physical locations out of which pedestrian static activities are derived. It sets apart the physical designs, which have and have not been deliberately designed for the random static activities of people (Francis 1984, *Space Syntax Manual*, see also Map 1 of the overall base map of observation in Part II of this chapter, see also Table O in Appendix B).

##### **4.3.2.1. Observation Days**

Total days of observation for all six areas were 2, Thu and Sat @ 1 parcel of 10 a parcel (15 min. walk). In total, 20 days staggered across 2.5 months.

##### **4.3.2.2. Observation Time**

i. 9.30 - 11.30 am: The first period of observation was selected in order to understand the presence of static activities in relation to the flow of movement of people during the morning rush hour.

ii. 12.30 - 2.30 pm: The second period was the lunch hour or the *midday culture* of city life (Hillier 1984). Hillier's analysis of some routes in Central London indicated that a high number of static activities could be observed at this time. This period was selected in order to compare the distribution of the pattern of use of streets by static activities (social activities) with the distribution of movement during the lunch hour.

iii. 5.30 - 7.30 pm: The third period is defined as the evening strolling time. This period was chosen in order to assess whether there was any distribution pattern in any type of static activity, which may depend greatly on the natural condition of the street itself. Such activities might be the main factor that would encourage people into a certain environment.

#### **4.3.2.3. Observation Technique**

A 3 round observation occupying a 2-hour period was carried out each day. Each two hour consisted of 2 rounds of 15 minutes walk (to and fro, totalling 30 minutes in each hour); i.e., 4 rounds per 2 hour slot. These rounds of observation are conducted in 6 snap shots @ 2 15 minutes walk snap-shots per hour per area in a one day observation.

#### **4.4. PROCESSING DATA; SYNTHESIS OF THE STATISTICAL AND SYNTACTICAL ANALYSES**

This part is divided into three main sections. *Section One, Analysing the Distribution of the Social, Socio-physical Variables and the Local Spatial Connectivity of Streets.* Section 4.4.1 shows the technique of calculating the empirical distribution of the social, socio-physical, and syntactical variables. *Section Two, Analysing Relationships.* Section 4.4.2 describes the relationships between these variables in a configuration of the sociability and accessibility of streets. *Section Three, Comparing The Proportion of Sociable and Accessible Streets.* Section 4.4.3 explains the technique for calculating the proportion of streets that are involved in achieving a balance of use by between people's static and dynamic activities.

The objectives of these analyses are described below:

- i. To provide a tool to understand the street environment in which static activities would be encouraged or inhibited.
- ii. To develop an analytical framework capable of revealing the social space of the street by accommodating and distributing static activities within the local and global network of streets in the urban area.

- iii. To understand the relationship between static and dynamic activities of people. This will configure the sociability and accessibility of streets.
- iv. To develop an analytical framework which provides a people-based approach to designing the liveliness of streets for people.

## **Section One - Analysing the Distribution of the Social, Socio-physical Variables and the Local Spatial Connectivity of Streets.**

### **4.4.1 Statistical Significance of Static Activities (NOR), the Physical Designs (SEBELE) and the Integration value(r\_3) of Streets**

The first step in processing the data adopts a simple statistical analysis. The analysis provides an understanding of the range of distribution of the independent variables, i.e. the social (N, O, R; V\_1), the socio-physical (SE, BE, LE; V\_2), and the syntactical (r\_3; V\_3). These variables are analysed in relation to the dependent variables, i.e. the total distribution of static activities (NOR) in the area (see figure 4.4 and table 5.1 of the synopsis of the variables in chapter 5). The range of distribution of each independent variable is first evaluated in terms of its statistical significance (p-value which is to be  $\leq 1$ ) to the total of NOR. This gives a preliminary calculation of the impact of these variables on the total occupation of static activities in the streets in the studied area.

The section is divided into two parts. The first is the descriptive statistical analyses of the differences and the distribution of the social and the socio-physical variables in the streets. The second is the Space Syntax axial line analysis of the syntactical variable, the value of the local spatial connectivity of the streets.

#### **i. Statistical Significance and Frequency Distribution of Social and Socio-physical Variables**

This section explains the descriptive statistical analysis, consisting of the statistical significance and the frequency distribution between the social and socio-physical variables in the total NOR in the area. The histogram represents the frequency

distributions of these variables (Hinton 1999) (see figure 4.3). In cases where the author wants to include the ‘continuous’ variables of these distributions of static activities, they are recorded, cross-tabulated and then ranked into a particular range - above or below the average. This rank of distribution is evaluated between the different hierarchies of streets in the area of the case study (see Part II of the chapter).

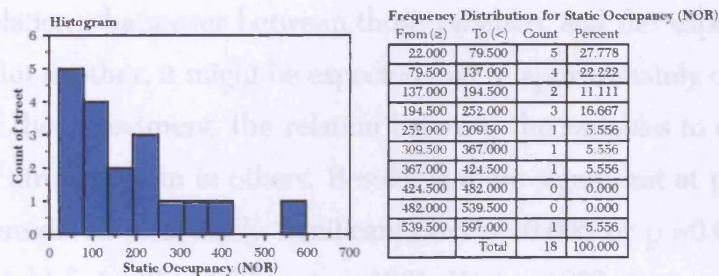


Figure 4.3 an example of a histogram and summary table which show the frequency distributions of the analysed variables.

This elementary statistical technique is adopted in order to understand the “quantitative nature” of the social and socio-physical variables (Nisbett et al., 1987). This process of analysis ensures the ‘validity’ and ‘reliability’ of the variables so that they may be used as empirical data for measuring the functional efficiency of streets for people.

Coming from a geographic position, Golledge and Stimson (1997) concluded that validity is concerned with the accurate measurement of the data, whether it is quantitative or qualitative. When comparing the findings of the research and the conclusions drawn, it is important to ensure the reliability of measurement of the data. This depends on the explicit description of the observed phenomena and procedures for processing the data.

What is “statistical significance” (p-value)? The statistical significance of particular data is the probability that the observed relationship (e.g., between variables) or differences (e.g., between means) in a sample, occurs by pure chance (“luck of the draw”), and that in the population from which the sample was drawn no such relationship or difference exists. For example, one could say that the statistical significance of a result indicates the degree to which the result is “true” (in the sense of being “representative of the population”).

The higher the p-value, the less it is believed that the observed relation between variables in the sample is a reliable indicator of the relation between the respective variables in the population. Specifically, the p-value represents the probability of error that is involved in accepting the observed result as valid, that is as “representative of the population”. For example, a p-value of 0.05 (i.e. 1/20) indicates that there is a 5% or one in twenty probability that the relation between the variables found in the sample is an accidental occurrence. Assuming that in the population there is no relation whatsoever between those variables, and the experiments are repeated one after another, it might be expected that in approximately one in every 20 replications of the experiment, the relation between the variables in question would be equal to or stronger than in others. Results that are significant at  $p=0.01$  level are commonly considered statistically significant, and  $p=0.005$  or  $p=0.001$  levels are often called “highly” significant (Rowntree 1981, Hinton 1999, [www.statsoft.com](http://www.statsoft.com)).

After calculating the p-value of these variables, the next step is to analyse their frequency distribution. Frequency distribution provides information on the rank distribution of the variables in question. This determines whether the distribution of a certain variable is above or below average.

## **ii. Local Integration Value ( $r_3$ )**

Hillier’s principal space syntax method of axial line analysis addresses the distribution of movement activities (pedestrians and traffic) within the spatial configuration of urban space. The integration value that is given in the axial line analysis represents the level of connectivity of a space in relation to other spaces within a global urban system. This technique of analysis quantifies people in moving modes, helping to predict a certain level of distribution of movement that corresponds with the level of connectivity between streets in the urban space.

Though it has been criticised as too simplistic and abstract, axial line analysis at least provides a basic quantitative framework for evaluating the value of urban spaces by explaining the relationship between the movement of pedestrians and traffic within the local and global aspect of the urban space. This quantitative evaluation helps urban designers understand the relationship between the local and global contexts of the use of streets by people. For these reasons, axial line analysis was chosen as the key



technique for analysing the dual relationship between the sociability and accessibility of the streets. This is explained in the following section.

## **Section Two - Analysing Relationships**

This section describes the next step in processing the data, which involves the analysis of the strength of the relationship between the variables and the distribution of static activities in the area. These relationships are measured through the correlation analysis of the variables in the configuration of the sociability and accessibility of the streets.

### **4.4.2. Correlation Analysis of the Social, Socio-physical, and Syntactical Variables for Configuring the Sociability and Accessibility of Streets**

#### **i. Applying the Configuration Technique**

Figure 4.4 is an explanatory diagram of the key conceptual framework. This framework synthesises the theoretical relations between the three key variables in the process of configuring the sociability and accessibility of streets. These key relations are described below;

1. Sociability: synthesises the relationship between static activities (V<sub>1</sub>) and the physical designs (V<sub>2</sub>) on which static activities are located. This reveals the configurative component of static activities within the micro aspect of the street. The sociability of streets incorporates the social relations between people in streets. It is quantitatively determined by the capacity of the street in accommodating static activities. This capacity is measured by the degree of correlation between (V<sub>1</sub>) and (V<sub>2</sub>) (see sub-section 4.4.2.i (a)).

2. Accessibility: synthesises the relationship between the physical designs and r<sub>3</sub>, the integration value of the street (V<sub>3</sub>). Such a relationship addresses static activities within the local and global aspects of the urban space. It integrates the configurative component of the micro aspects of static activities into the macro, or the global network of streets. It emphasises the spatial relations of people within the environment. Accessibility is quantitatively determined by the capacity of the street to accommodate and distribute static activities within the local and global network of

streets. Its capacity is measured by the degree of correlation between  $V_2$  and  $V_3$  (see sub-section 4.4.2.i (b)).

3. Sociability vs Accessibility: addresses the relation between the social ( $V_1$ ) and syntactical ( $V_3$ ) variables. Such a relationship deals with the issue of balancing the use of streets between the static and dynamic aspects of the activities of people within the local and global network of streets (see section 4.4.).

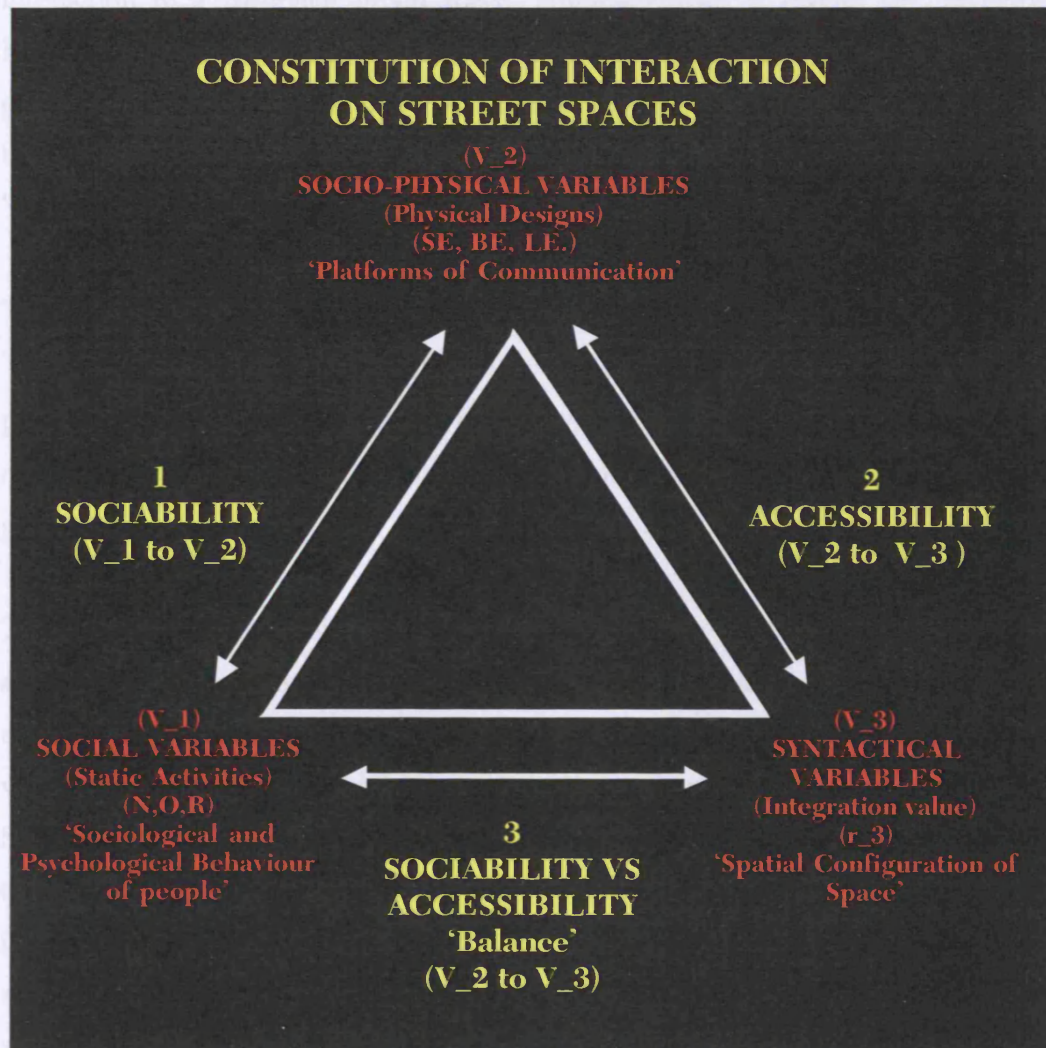


Fig. 4.4 A conceptual framework of the synthesis of the statistical and syntactical variables for configuring the sociability and accessibility of streets. This framework demonstrates the typology (a systemic analytical process) between the social and spatial function, the sociability and accessibility of streets in addressing the theoretical relationships between the micro and macro structure of interaction between people and people and the environment. This systemic process addresses the interface of the three key variables ( $v_1$ ,  $v_2$ ,  $v_3$ ) for configuring the sociability (1) and accessibility (2) of streets through which its successful function or liveliness could be evaluated. The diagram also shows the three steps (1, 2, 3) to be taken in measuring the liveliness of streets for people.

Sociability operates within the context of how streets function socially for people. It relates static activities to their locations in the local condition of the individual streets. This theoretical relationship emphasises the configurative component of a micro system of interaction in streets. On the other hand, accessibility addresses the spatial function of the street. It relates the global aspect of the sociability of individual streets to another network of streets within the area. In theory, this integrates the configurative component of the micro system of interaction with the macro system of interaction in a particular urban space. Simultaneously, it reveals the relationship between the spatial configuration of the area and the physical designs, which would encourage and thus accommodate and distribute static activities in streets. In this way, the factors which influence people to change their activities from 'moving' to 'stationary' mode, are also considered.

Theoretically, this framework relates the topography to the topology of the 'configuration' of the 'structure of interaction routines' in the everyday life of pedestrians. To Hillier, '*configuration simply means relations taking account of other relations*' (1984, p.3). This spatial configuration measures the relations within the physicality of space.

The above relations could be calculated by adopting a technique of analysis that accounts for the local and global dimension of static activities in streets. Thus, Hillier's configuration technique is adopted in order to analyse the relation between the variables in influencing or inhibiting static activities in making lively streets for people. Subsequently, the theoretical relationships of the statistical and syntactical variables are supplied with their quantitative calculations. Most importantly, this calculation involves the application of the 'configuration' technique to analysing the interplay or relationships of the variables for designing the sociability and accessibility of the streets. This measure relates the analysis of one aspect (social) of the manifestation of static activities to its other aspect (spatial).

A key component in this technique is the assessment of the empirical distribution of static activities in the design of street sociability and accessibility. It includes static activities in the physical layout of streets, quantifying the chances, i.e. the possibility and probability, of their existing in the street.

Next, the correlation value of these chances existing is calculated by taking account of the possibility of static activities being influenced or discouraged by the three variables above. This correlation value measures the degree of variability in the concentration of static activities in streets. Applying the correlation analysis in this way simply synthesises the technique of analysing the chances of static activities existing with space syntax axial line analysis in order to address the local and global aspects of static activities. This forms the correlational analysis of the statistical and syntactical variables for measuring the configuration of the sociability and accessibility of streets.

Why are relations between variables important? It is noted that the ultimate goal of every research project or scientific analysis is to find the relations between variables. The philosophy of science teaches that there is no other way of representing “meaning” except in terms of relations between some quantities or qualities. Thus, the advancement of science must always involve finding new relations between variables. ‘Correlational research involves measuring such relations in the most straightforward manner’ ([www.statsoft.com](http://www.statsoft.com)).

The two most elementary formal properties of every relationship between variables are ‘magnitude’ (or “size”) and ‘reliability’ (or “truthfulness”). The magnitude is much easier to understand and measure than the reliability. For example, if an x variable is found to have a higher impact on the sample than the y variable, then it could be said that the magnitude of the relation between the two variables (impact of x on samples) is very high in the sample in question. In other words, one could predict one relationship based on the other (at least among the members of the sample). The ‘reliability’ of a relationship is representative of the result for a specific sample generalised to the entire population. In other words, it indicates how probable it is that a similar relationship would be found if the experiment were replicated with other samples drawn from the same population (*ibid*).

Returning to the first step of analysis previously discussed, the proposed framework analyses the three variables in the samples of streets only to the extent where it can provide information about the population (i.e. the streets). If the information provided in this framework meets a standard of measurement, then the reliability of the quantitative relations between the three variables observed in the samples can be estimated using a standard measure (technically called the p-value and otherwise known as the statistical significance level). After analysing the magnitude and

reliability of relations of these variables, their strength, i.e. their degree of influence in the configuration of the sociability and accessibility of streets, is then calculated.

Correlation is the degree of association between two or more variables, mainly used in the statistical analysis of interval and ratio data. This degree of correlation is represented by  $r$ , which is referred to as the ‘correlation coefficient’. The square of the  $r$  value, which is  $r^2$ , is interpreted as the proportion of the variation in one variable that can be accounted for by the variation in the other. It is referred to as the ‘coefficient determination’ (Gregory et. al 2000, Rowntree 1981).

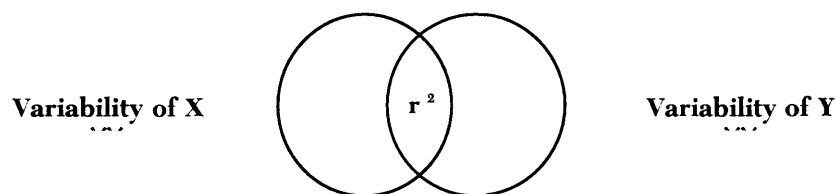


Figure 4.5 The coefficient determination ( $r^2$ ) (Hinton 1999, p. 268)

One-way of deciding the strength of the correlation is to consider how much of the variability of the score in one variable can be explained (predicted) by the variability of the score of the other variable. Figure 4.5 shows that the overlap of the two circles ( $r^2$ ) indicates the amount of variability of one variable (X) that can be explained by the variability of the other variable (Y) (Hinton 1999).

0.0 to 0.2	very weak, negligible
0.2 to 0.4	weak, low
0.4 to 0.7	Moderate
0.7 to 0.9	strong, high, marked
0.9 to 1.00	very strong, very high

Table 4.1 Guide on the correlation coefficient ( $r$ ) value (Rowntree 1981, p. 170)

The strength between the variables is determined by calculating the correlation coefficient ( $r$ ), which is the value of the relationship between two or more variables (see table 4.1). This value gives the variation of the degree of relationship between an independent and dependant variable, and depends on the variables in question. In this case, it is determined whether  $r$  falls between  $-1$  to  $0$  or  $0$  to  $1$  ( $r = -1 \geq 0 \leq +1$ ). If  $r$  is found to be negative ( $-$ ) the variables are said to be uncorrelated to each other. It also indicates that as the values of one variable increase, those of others decrease (it

can also depend on the interpretation of results based on a specific pattern of research). When  $r$  is positive (+), the variables are correlated with each other.

The correlation coefficient between two variables is a fact. Whether such a correlation is strong or weak, satisfactory, or otherwise, is a matter of interpretation (Rowntree 1981). In the proposed framework, the domain of measuring the level or the degree of influence of the three variables with each other's distribution depends on the correlation coefficient value of  $r$  being lower or higher ( $0.5 > r > 0.5$ ). This calibrates or standardises the measure of the level of sociability and accessibility of streets. For instance, if a high correlation is recorded between the distribution of static activities (NOR) within certain physical designs (SE, BE, LE) in a street, there is a high probability that the physical designs influence the occupation of static activities in the particular street.

The  $r$ -value is then calculated as the proportion of variation between variables. This proportion reflects the strength of the relationship(s) between the variables and influences the density of static activities. This strength is calculated by applying a regression analysis between variables and is represented as percentages ( $r^2$ ) which provide the value of the degree of influence between variables. Such a value would indicate if it were possible to relate the strength of each of these variables to one another in 'predicting' the distribution of static activities in both the local and the global network of streets.

A regression equation graph provides the value of a regression analysis of the variables. Squaring the  $r$  value ( $r^2$ ) gives the coefficient determination of each variable. Supposing, it is given the correlation coefficient  $r = 0.92$ , the coefficient determination is calculated as  $r^2 = 0.92 \times 0.92 = 0.85$ . In turn, 0.85 is calculated as a percentage, and it is equivalent to 85%. This means that 85% of variations of the particular variables could be explained by the variations of other variables with the correlation coefficient  $r = 0.92$ . The  $r$ -value, which is the strength of a particular variable, say the  $x$  variable, is a variation of 85% of the  $y$  variable (figure 4.5).

The correlation and regression techniques analyse the dispersion of the three key variables in the distribution of static activities in the area. These statistical tools are combined with the syntactical tool (Space Syntax axial line analysis) to analyse the

degree of influence on the invariability of the three key variables in the configuration of the sociability and accessibility of streets.

The correlation and regression analysis provides guidance in deciding whether there is a need to increase or decrease static activities in managing streets used by people. This raises the question of the impact of design in bringing people together to generate static activities in the physical conditions of the street.

This analytical framework evaluates the variation in influence of the three main variables for stimulating or discouraging the use of streets for people. The investigation of this variation of influence would give an understanding of the level of sociability of the individual streets according to their hierarchical differences.

#### **4.4.2.1. Calculating the Sociability of Streets**

In calculating the sociability of streets, firstly it is important to analyse the strength of the relationship between the individual types of static activities (N, O, R) and the total distribution of static activities (NOR) in the area. This strength is determined by calculating the r-value of each type of static activity in relation to the total distribution of static activities. The  $r^2$  of each type of static activity is then calculated by applying regression analysis. The analysis of the values of each type of static activity would indicate the most influential activity in the total occupation of static activities in the area. This helps to intrinsically identify the type of social variable which would be more likely to generate static activities in the particular local condition of streets. Thus, such strength would constitute the chances, i.e. the possibility and probability of each type of static activity existing in the studied area.

The next step is to calculate the sociability level of the streets (referring back to figure 4.4). The relation between the social ( $V_1$ ; NOR) and socio-physical ( $V_2$ ; SE, BE, LE) variables constitutes the sociability (1) of streets. This relation is calculated by correlating the total distribution of static activities in the area with the occupation by static activities of each type of the physical design. This shows the level in which the social and socio-physical variables correspond to one another. This is the main parameter, which sets the measure for the sociability of the local conditions of the particular streets in question.

The r-value between the above variables constitutes the configuration of the sociability of the street. The strength, i.e.  $r^2$  value of each variable influencing one another, is then calculated by applying regression analysis. This provides and quantifies the degree to which these variables co-relate. This is to understand the strength of each physical design, and to what extent it contributes to the total distribution of static activities in the particular local condition of the street (see correlation matrix and regression graphs of analysis in section two in chapter 5).

The chances of each of the physical designs generating static activities could be used as a measurement to predict the likely distribution of static activities. This would provide information on whether a certain degree of influence might be used to predict a high or low use of streets by static activities.

When deciding whether the particular streets exhibit high or low sociability, their sociability level would first need to be decided. This level is determined by analysing the r-value between the distribution of static activities (NOR) and the three physical designs (SE, BE, LE). When the r value is higher than 0.5, the level of sociability is assumed to be high, and when r is below 0.5, then the level of sociability is low. If the r-values of all three physical designs are equal to or higher than ( $r \geq 0.5$ ), the condition of the particular street is regarded as sociable. If the value of only one of the three physical designs produces a high r-value - indicating that only one type of the physical designs is highly occupied by static activities - it is unlikely that the particular street is sociable. If only one of the categories is high, it is not enough to assume that the street is sociable (the reason might be due to the combination of the physical designs, which are not conducive enough to encourage static activities). All three physical designs observed would need to be fairly used (each of them with  $r \geq 0.5$ ) in order to say that the in the particular street where these physical designs are observed is sociable.

#### **4.4.2.2. Calculating the Accessibility of Streets**

As illustrated in figure 4.4, the relation between the physical designs (SE, BE, LE; V<sub>2</sub>) and the local integration value of each street (r<sub>3</sub>;V<sub>3</sub>) constitutes the accessibility of the street (2). The correlation analysis calculates this relation and measures the configuration of the accessibility of the streets.



The technique calculates the strength, the quantitative potentiality of the physical designs to 'produce' the sociable aspects of streets in relation to their connectivity in the urban space (according to its integration value). Analysing such strength provides information on the capacity of the particular local condition of the street to convey its sociability aspect to other streets in the network. It analyses how the physical locations embedded within the global structure of streets could be quantitatively evaluated for accommodating static activities of people. Such a value also provides a way of analysing the 'chances' or probability of the use of streets for static activities within the local and global network in the area.

This technique calculates the quantitative relationship between the sociable aspects of streets and their spatial configuration. It takes account of the relationship between the sociability conditions of the local streets and their topological or syntactical value, which is the connectivity value of the streets in the configuration of urban space. Considering the topological value of their sociability would allow streets to be simultaneously addressed within the local and global network in the particular area. Such a topological evaluation would inherently analyse the accessible aspects of the individual sociable street (with its local distribution of people's static activities), to their global network in the area.

The same measure of correlation coefficient ( $r \geq 0.5$ ) used to calibrate the sociability level of the street is used for deciding its sociability level. As regards accessibility, high  $r$ -values for all three physical designs would be required when deciding whether the particular street is accessible for static activities.

### **Section Three – Comparing the Proportion of Sociable and Accessible Streets**

The final aspect of this data processing as shown in figure 4.4 relates the sociability (1) to the accessibility (2) of streets. This relation constitutes the balance (3) of use of the streets by the static and dynamic activities of people. This raises two questions: (1) what proportion of the frequencies of the primary, secondary, and tertiary streets with high sociability could be associated with the streets with high integration value in the area? (2) How would the expected frequency be assessed in these different hierarchies of the streets?

#### **4.4.3. Chi-square Analysis; Measuring the balance between the Sociability and Accessibility of Streets**

According to axial line analysis, highly-integrated or streets highly connected to other streets in the global configuration of urban space are normally associated with a high pattern of movement activities (which include pedestrians and traffic). This section investigates the extent to which axial line analysis of the pattern of movement could be applicable to the use of streets by people's static activities. The measurement of this use is analysed by examining the distribution of static activities (NOR:V-1) in relation to the integration value ( $r_3$ :  $V_3$ ) of the streets (figure 4.4).

A chi-square ( $\chi^2$ ) analysis is employed to analyse the above relation. A chi-square analysis is a 'non-parametric' test. This test is used in order to understand whether the connectivity and the integration level of the streets (the independent variables) would show a significantly different level of distribution of static activities (dependent variable) in them. This would decide whether it could be generalised from the samples of streets that they are also different in these aspects of use (Hinton 1999, Rowntree 2000).

This technique of analysis is employed to establish the 'objective function' of the measurement of the use of streets for static and dynamic activities of people. This balance of use is measured by comparing the 'observed' and 'expected' frequency of streets with high sociability levels with their integration value (see table 5.13 in chapter 5). The analysis of the frequencies of such aspects of streets compares the proportion of the uses of streets for static activities. This gives an understanding of whether the use of the particular streets for static activities needs adjusting or not. The statistical differences in this proportion of streets are then calculated in terms of its chi-square value (the interpretation of its statistical significance, p-value, is based on the  $\chi^2$  distribution value in the appendix).

The above analyses whether the distribution of static activities in the particular street is significantly influenced by the configuration of the urban space as addressed through the configuration analysis of the axman software. This gives an understanding of whether the proportion of streets which are highly sociable are statistically significant with the level of integration of streets in their network. This quantitatively defines

the balance of use between the social and spatial functions of streets for pedestrian activities.

The proposed method provides a holistic analytical tool to measure the local and global relationships of the three key variables of the particular street in question. This provides an understanding of the strength of the influence of certain variables on one another in enhancing the use of streets by people. The particular framework (figure 4.4) shows the steps by which the micro and macro aspects of static activities of people could be addressed simultaneously in the urban space. This holistic approach adds a new dimension to analysing the use of streets, where people would be the important measurement in evaluating the successful function of streets for people.

## **Part II – Case Study**

### **4.5. PRELIMINARY OBSERVATION**

Section 4.3.1 earlier has introduced the basic character of the streets involved in the case study area. The high proportion of retails in the area are also mixed with other residential, hotels, institutional and office uses. The mixed variety of uses of these networks of commercial streets within the vicinity of the prestigious Regent Street has positioned the streets as interesting for comparison in their uses for static activities.

#### **4.5.1. Eighteen Streets Observed**

A preliminary observation was first carried out on several commercial streets in Central London; viz. Regent Street, Soho and Mayfair (see figure 4.6 on the map of preliminary observation). In particular, eighteen streets are observed in detailed and they are listed in table 4.2.



Figure 4.6 Map 1 - Overall base map of Regent Street and the surrounding primary, secondary and tertiary streets in the studied area (see also Map of Site of Interest in Part II, Maps of Snap Shots in chapter 5).

Allan Jacobs (1993), who observed several great streets around the world discovered that people walk fast on Regent Street compared to other Great Streets, amongst

Parcel	Type	Street
A	Primary	Regent Street I/II
	Secondary	Margaret Street
	Tertiary	Great Castle Street
B	Primary	New Bond Street
	Secondary	Maddox Street
	Tertiary	Old Burlington Street
C	Primary	Regent Street III/IV
	Secondary	Conduit Street
	Tertiary	Hanover Street
D	Primary	Regent Street V
	Secondary	Gt. Marlborough Street
	Tertiary	Kingly Street
E	Primary	Regent Street VI/VII
	Secondary	Beak Street
	Tertiary	Brewer Street
F	Primary	Wardour Street
	Secondary	Berwick Street
	Tertiary	Broadwick Street
Total		18

Table 4.2 eighteen streets of the case study

The perimeter of the case study area, the main site of interest, of the above streets is determined within 30 minutes radius of the travelling time for pedestrians, i.e.  $r = 3$  km from the site's edge to other network of streets in the area (the Map of Site of Interest is shown in Part II, Maps of Snap Shots, in chapter 5). This demarcation is based on Space Syntax manual, which gives a standard boundary of an area for pedestrians' walking distances. This main area of interest is split in 6 parcels, A, B, C, D, E and F. Each parcel consists of three types of streets, the primary, secondary and tertiary. Each category of the street shows fair distributions of traffic and pedestrians in the area (see further descriptions of the streets in each parcel in Part II, Maps of Snap Shots, in chapter 5)

The preliminary study shows that in Regent Street, a high number of pedestrians are observed in moving positions, i.e. walking. In contrast, a high number of pedestrians in static positions, where sitting, standing, chatting, etc, are observed in many surrounding secondary and tertiary streets. They include Great Marlborough Street, Berwick Street Broadwick Street and Wardour Street in the Soho area (see synopsis of observation data on static activities in table 5.1 in chapter 5; see also data on pedestrian static activity in Appendix B.1).

Allan Jacobs (1993), who observed several great streets around the world discovered that people walk fast on Regent Street compared to other *Great Streets*, amongst

them Placa de Catalunya and Paseo de Gracia in Barcelona (p.316) (see table 2.2 in chapter 2).

Based on the above observation, the thesis argues that some of the important commercial streets, such as primary streets with a high distribution of people walking on them, do not ensure that they are highly occupied with people sitting, chatting, etc. For this particular reason, these streets do not necessarily successfully function for people to carry out their daily static activities.

In the case of Regent Street, Jacobs (1993) seems to conclude that people may only be using it as a *thoroughfare* rather than a shopping street (p.316). This was evident when Jacobs considered Regent Street as a major traffic street, *full of cars, noise, fumes* (p.162). Regent Street was not considered a place for people to stroll, sit, meet, etc.

This observation has raised an important question in the urban design field. Why are there differences in the way people use these streets? The cause of such differences might be related to the lack of examination and understanding of how important static activities are. They should be considered as urban elements, capable of reinforcing the way in which streets function socially, prioritising people rather than the traffic. The causes of these differences may strongly imply that people do behave differently, based on various aspects of the streets (social, socio-physical, and spatial), which could be fundamental, in order to facilitate people in the streets. Moreover, there is a gap in knowledge in the urban design field especially in the empirical and objective way of designing streets for people (Anderson et. al 1986, Moudon 1987, Fyfe et. al 1996).

Some streets may not even support basic aspects of people's static activities such as offering places to sit, chat, etc. Some of the physical designs available in these streets may be unattractive and unappealing to people. Thus, it is unlikely that these streets would encourage social interaction to occur (Whyte 1988, Caliendo 1986, Francis 1984, 1987, Jacobs 1993). A conducive environment for people is required when designing streets to function socially, i.e. people-orientated rather than spatially-orientated, i.e. traffic orientated. Commercial streets in particular would need to encourage human interaction to complement the surrounding businesses. This has

been an important design paradigm pursued by urban designers in promoting functional urban and street spaces for people in urban areas (Richards 1966, Whyte 1980, Gehl 1975, DOE 1996).

Streets which are not conducive to people can be related to differences in the physical layout or the topography of streets. For instance, in some streets there may be available pedestrian amenities such as benches and comfortable pavement surfaces that are conducive to pedestrians walking slowly, so they stay longer there (Pressman 1987, Jacobs 1993). Such aspects of design may be required for certain streets to function commercially for people. The lack of these elements in streets may be related to the lack of research and an insufficient understanding of how static activities are embedded within the streets.

#### **4.6. REGENT STREET AND ITS SURROUNDING STREETS**

##### **4.6.1. Background to Regent Street**

Regent Street is owned by the Crown Estate and was built between 1817 and 1823 by Sir John Nash, a well-known architect of the time (figure 4.7). The street was initially built as a processional route for the Prince Regent (Bacon 1976, 1992, Moughtin 1992, Parker 1994). The rich legacy of Regent Street is noted by Parker (1994):

*at that time the street was built towards expressing power, aristocratic capitalist approach rather than for the public* (Parker 1994, p.38).

Regent Street was also designed with shopping, walking, and conversing in mind. It was intended as a social milieu of vitality (see figure 4.8 on the historical business scene of Regent Street). It was termed the 'Corinthian Path', indicating its status as the height of fashion (Egan 1821, Rendell 1998).

By the early 1920s, Regent Street had started to be used as a shopping street. Since then, the Crown Estate has owned and managed it (The Crown Estate 1994, City of Westminster 1997, see also map in figure 4.9 that shows the land uses belonging to The Crown Estate).

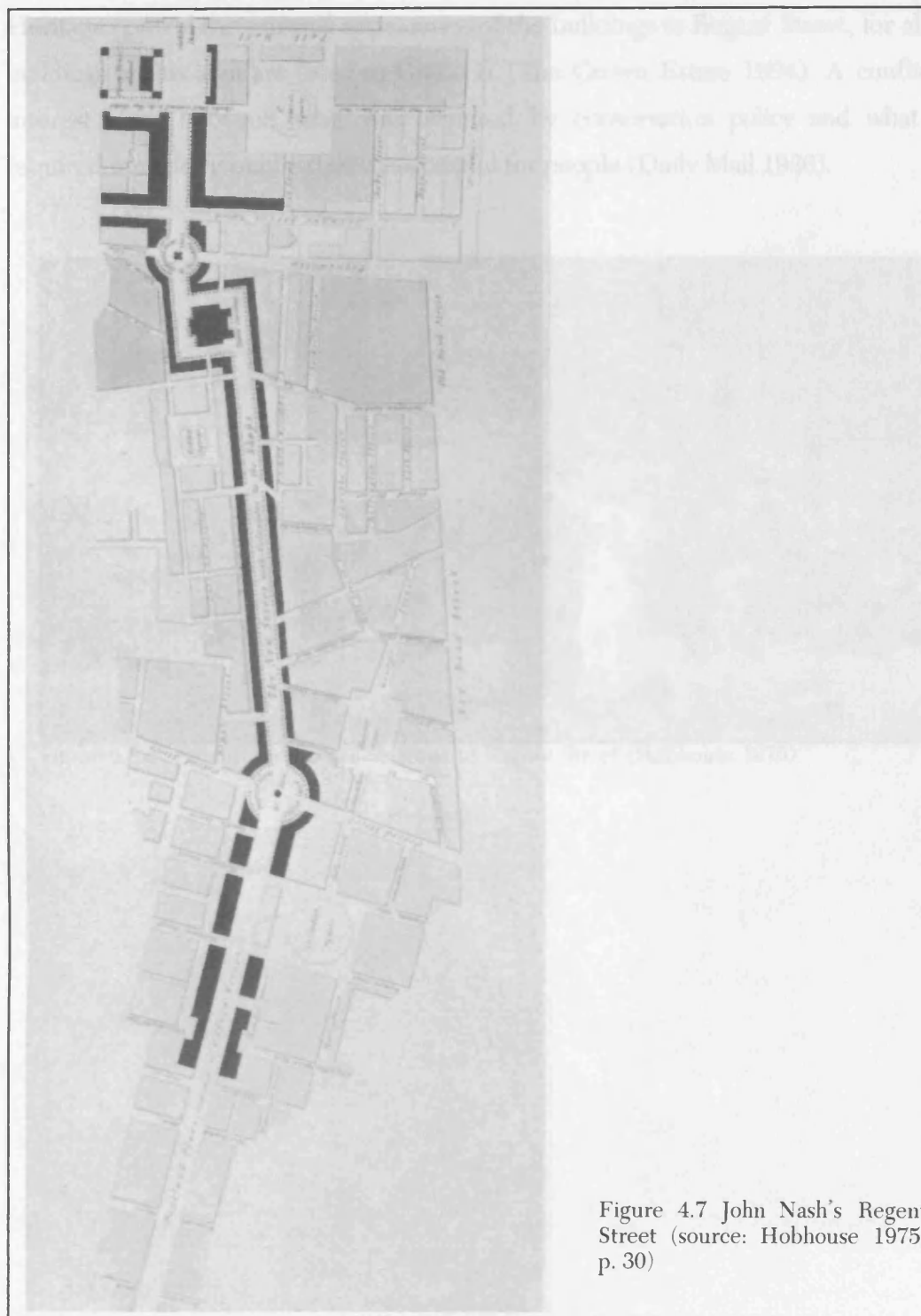


Figure 4.7 John Nash's Regent Street (source: Hobhouse 1975, p. 30)

Its historical architectural importance combined with its aristocratic association in the City of Westminster had significantly enriched as well as controlled the development of Regent Street up to the present day. Regent Street falls within the conservation area of Central London (see leaflets from the City of Westminster in Appendix C).



Planning restrictions on conservation areas have led to the use of land or activities in Regent Street being maintained to a minimum level. The local authority and English Heritage control the external appearance of the buildings in Regent Street, for all the buildings in this area are listed as Grade II (The Crown Estate 1994). A conflict of interest arose between what was required by conservation policy and what was required in making public streets successful for people (Daily Mail 1926).



Figure 4.8 on the historical business scene of Regent Street (Hobhouse 1975)

Figure 4.9 The business scene on Regent Street, London (The Crown Estate)

#### 4.8.2. Regent Street and its Development

*"The architectural treatment of Regent Street and the high street ... had very little to suggest."* (Moughtin 1992, p.165)

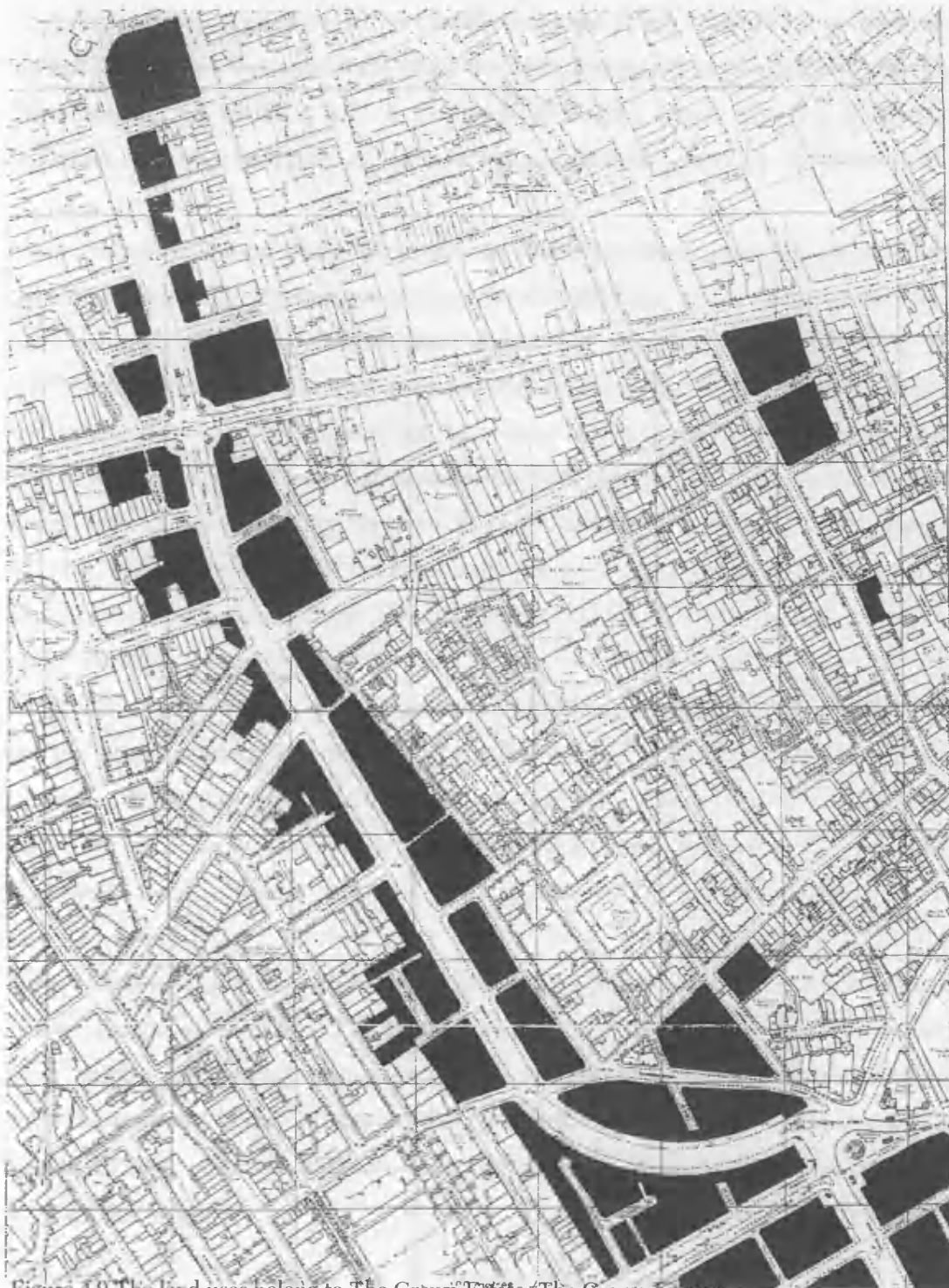


Figure 4.9 The land uses belong to The Crown Estate (The Crown Estate)

#### 4.6.2. Regent Street and its Development

*\* The architectural treatment of Regent Street and the high street .... had very little in common \** (Moughtin 1992, p.165)

Regent Street has been noted for its grandiose design. It has a significant architectural authenticity of the Victorian style which has been preserved to the present day. For these reasons, the planning and development of Regent Street aimed at promoting the street as a route for traffic as well as a retail route within the City of Westminster.

Since its completion by Nash, the street has undergone many changes. Its particular development in 1992 primarily concerned the development of the streetscape, which included street furniture such as street-lights, bus shelters, paving footpaths, and traffic-lights. However, the work involved was minimal due to the need to observe the conservation policy imposed on the area. These improvements were quite restrictive and provided minimal benefits for pedestrians. For instance, there is no standard provision of seating places, which might cater for the need of pedestrians to sit, chat, watch, etc, which would encourage people to spend time there rather than use the street as a throughfare. This problem is obvious as there are very few public nodes available for people to rest or stop. People seem to have been prevented from using the street as more than just a road to pass through. They do not seem able to use the street for shopping and one which will let them stroll along it and stay longer to admire the scenery and the architectural significance, both of which are offered by the street (refer to '*A Guide to Shopfronts & Advertisements on Regent Street*', see also Appendix D, a booklet from The Crown Estate, 1994, Daily Herald 1923).

Even though Regent Street is well-known for its famous successful shops such as Austin, Jaeger, etc a 'centre of fashion' (Hobhouse 1975); the street does not seem to offer much to pedestrian static activities. It prompts the question whether such an important primary street for pedestrians and vehicular movement could manage to sustain its legacy as a historical and commercial street, inhabiting some architectural heritage extravaganza.

These characteristics of Regent Street make the street and its hinterland a fascinating candidate for research. Preliminary observations (see section 4.5) revealed that despite its unique characteristics and status, the issues faced in this part of London relate well to the urban design debates previously discussed, and that lessons deriving from the area would have broader application to urban street networks around the world. The success of such a network of streets should be measured according to how

people use them every day. As such, it was chosen as the focus for the field work upon which this thesis is based.

#### **4.7. SUMMARY**

Two principles of this methodology are conceptualised. The first approach introduces an empirical investigation on the observation of pedestrian static activities in streets. The second is more integrated, looking at a way of addressing the configuration of streets via space syntax technique and relating this relationship to the function of streets so as to incorporate pedestrian static activities. These two approaches address the social and spatial dimension of static activities in streets. These set the parameter for measuring the sociability and accessibility of the streets.

These approaches deal with the two theories of, firstly, environmental possibilism, which is when people make their own choices of experience through the physical surroundings that are available to them, and secondly, environmental probabilism, which is the probability of choices being available to people within the spaces in the environment. Technically, it establishes the argument of 'environmental probabilism', by providing locations for potential interaction in the streets. The synthesis of both environmental possibilism and probabilism with axial line analysis is then adopted to help understand the local and global aspects of static activities in urban space. This identifies the related key variables or urban mechanisms, which are related to these activities through three key variables: social, socio-physical and syntactic.

The proposed framework analyses these variables in three stages. Firstly it analyses the distribution of the variables through statistical analyses of the statistical significance (p-value) and the frequency distribution. The second step involves the calculation of the interrelationship of the variables. This applies the correlation and regression analysis (r-value and  $r^2$  value). The final step seeks to provide a tool for planners and urban designers to understand the importance of street hierarchy with relevant empirical data on pedestrian static activities, which can then influence the efficient use of the social and spatial functions of the street. This is conducted by applying a chi-square analysis, which compares the proportion of highly sociable streets with high-integrated streets. Ultimately, this provides the quantitative analysis,

balancing the use of streets for static and dynamic activities of people, and hence promoting the balance between the sociability and accessibility of streets.

The technique used in the method of observation, i.e. the mapping technique with a combination of axial line analysis from space syntax, is intended to be a useful design tool to directly influence policy and design decisions in determining the future performance of streets in urban areas. This would have a useful input in the planning process, providing an opportunity to gather both pre-construction and post-construction data (eg. the Post Occupancy Evaluation (POE)) for evaluating downtown changes in terms of human use and the possible use of activities (Francis 1998). It seeks to create a new dimension in the urban design field, by looking at pedestrian static activities in relation to their uses of space on the street as a prelude to interaction. The technique is applied to pedestrian static activities and its application is analysed.

## CHAPTER 5

# Quantitative Analysis of the Sociability and Accessibility of Streets

This chapter is divided into two parts: Part I consists of three sections. *Section One* analyses the *Distribution of Static Activities (NOR) and the Local Spatial Connectivity of Streets ( $r_3$ )*. These analyses are presented in section 5.1 and are highlighted in section 5.2. *Section Two* analyses *The Relationship between the Social, the Socio-physical, and the Syntactical variables of the Configuration of the Sociability and Accessibility of Streets* and is divided into three sections. These are the correlation and regression analyses of the strengths of the relationships of these variables in influencing one another for configuring the sociability and the accessibility of the streets. Section 5.3 calculates the sociability of the streets and section 5.4 their accessibility. Section 5.5 highlights the important outcomes of these analyses. Finally, *Section Three, Comparing the Proportion of Sociable and Accessible Streets*, analyses the proportion of the types of streets with their sociability levels in relation to their levels of local spatial connectivity to another network of streets in the area. The chi-square analysis calculates the statistically significant difference between these proportions of streets. This subsequently reveals the balance between the sociability and accessibility of the streets in the studied area.

The above quantitative calculations of the social, socio-physical, and syntactical variables are presented in association with the conceptual framework of the methodology as was described in chapter 4 (see figure 4.4).

Part II are the maps of the snap-shot observations of static activities on the eighteen streets in the studied area (see also Appendix B.1 for a detailed tabulation of these observations in each street).

Accordingly, the chapter presents the data of static activities observed between June and August 2000. Table 5.1 is a synopsis of the distributions of the social (static activities), the socio-physical (physical designs), and the syntactical (r\_3 values) variables tabulated according to the eighteen streets studied for the thesis.

Parcel Type	Street	Social Variable (Static Activities) V-1	Socio-physical Variable (Physical Designs) V-2			Syntactical Variable (Local Integration Value) V-3
		NOR	SE	BE	LE	r_3
A	(P) Regent Street I/II	293	95	37	161	4.159
	(S) Margaret Street	113	29	17	67	3.705
	(T) Great Castle Street	63	18	12	33	2.781
B	(P) New Bond Street	597	39	45	513	3.139
	(S) Maddox Street	72	25	13	34	2.397
	(T) Old Burlington Street	22	4	4	14	1.833
C	(P) Regent Street III/IV	367	90	67	210	3.317
	(S) Conduit Street	60	12	8	40	3.301
	(T) Hanover Street	85	30	7	48	2.485
D	(P) Regent Street V	204	20	52	132	3.883
	(S) Gt. Marlborough Street	230	80	38	112	2.805
	(T) Kingly Street	82	23	35	24	2.524
E	(P) Regent Street VI/VII	215	27	22	166	3.022
	(S) Beak Street	73	27	11	35	2.877
	(T) Brewer Street	168	41	19	108	2.252
F	(P) Wardour Street	341	94	24	223	3.238
	(S) Berwick Street	167	37	23	107	3.133
	(T) Broadwick Street	108	35	27	46	2.784
<b>Total</b>		<b>3260</b>	<b>726</b>	<b>461</b>	<b>2073</b>	

Table 5.1. These are the observation data of the Social (NOR) and Socio-physical (S.E, B.E, L.E) variables, and the local integration values of the streets, the Syntactical variables (r-3).

The first column lists the six main parcels of areas A, B, C, D, E and F (see maps A, B, C, D, E and F in Part II of the chapter). The following two columns list the three types (the primary (P), secondary (S) and tertiary (T)) of the respective streets in each parcel. The fourth column lists the total distribution of static activities (NOR) observed in each street. This distribution is the summation of the observed three types of static activities, the Necessary (N), Optional (O) and Resultant (R) activities (see table O in Appendix B for a detailed list of static activities in these respective categories). Total distribution of NOR on all streets in the studied area is given as 3,260 observations<sup>2</sup>. The fifth, sixth and seventh columns are the distribution of NOR observed on three types of physical designs, i.e. the street element (SE), building

<sup>2</sup> From here onwards, the 3260 observations of the total distribution of NOR on all streets in the area is referred to as the total of NOR or the NOR.



element (BE) and land-use element (LE) (see table O in Appendix B for a detailed list of physical locations in these categories). The total distribution of NOR in each category of these physical designs is given as 726<sup>3</sup>, 461<sup>4</sup> and 2073<sup>5</sup> observations respectively. Finally, the end column lists the eighteen streets' individual local integration values (r\_3).

## Part I - The Analysis

### SECTION ONE – DISTRIBUTION OF STATIC ACTIVITIES (NOR) AND THE LOCAL SPATIAL CONNECTIVITY OF STREETS (r\_3).

This section is divided into three parts. Sections 5.1.1 and 5.1.2 analyse the frequency distribution of both social and socio-physical variables, and section 5.1.3 is the space syntax axial line analysis of the syntactical variables, which calculates the local spatial connectivity of the eighteen streets in the studied area. These three variables are analysed in relation to the total distribution of NOR in the area.

#### 5.1. STATISTICAL ANALYSES OF SOCIAL, SOCIO-PHYSICAL VARIABLES, AND SPACE SYNTAX ANALYSIS OF SYNTACTICAL VARIABLES

	N	O	R	S.E	B.E	L.E	r_3
NOR	p< 0.001	p< 0.001	p< 0.001	p< 0.001	p< 0.001	p< 0.001	p<0.0058

Table 5.2 The matrix above shows the p-value of the social, the socio-physical and the syntactical variables to the distribution of NOR (summation of the distribution of Necessary, Optional and Resultant Activities) in the area.

The 'statistical significance' (p-value) relations of the distributions of the social, socio-physical and syntactical variables in table 5.1 above to the total of NOR is then analysed (see chapter 4). The p-values are presented in table 5.2. This table shows that the p-values are high, which means that these variables are statistically significant to the total of NOR in the studied area. By acquiring such high p-values, these variables are considered valid and reliable to be further used in section two, for

<sup>3</sup> 726 observations of the total distribution of NOR on SE is referred to as SE throughout the analysis.

<sup>4</sup> 461 observations of the total distribution of NOR on BE is referred to as BE throughout the analysis.

<sup>5</sup> 2073 observations of the total distribution of NOR on LE is referred to as LE throughout the analysis.



analysing the configuration of the sociability and accessibility of the streets in the area (Hinton 1999).

In order to understand more fully the tabulation and the p-values of these variables, their range of distributions in the eighteen streets is further analysed, and is divided into three subsections. Sections 5.1.1 and 5.1.2 detail the frequency distributions, which give the average of the distributions of these social and socio-physical variables. These analyses determine the regularity and irregularity pattern of the distributions of these two variables, either one of which will manifest whether it has a high or a low influence on the NOR's distribution in this area. Finally, subsection 5.1.3 reports an independent analysis based on the previous two subsections. It analyses the level of the local spatial connectivity of the eighteen streets within the studied area. It applies an axial map of Space Syntax analysis to the streets, and calculates their global ( $r_n$ ) and local ( $r_3$ ) integration values. These integration values are evaluated for their effects on the total of NOR in the area.

#### **5.1.1. Distribution of Social Variables**

Firstly, the bar chart in figure 5.1a ranks the range of the distributions of NOR in the eighteen streets. The chart shows that New Bond Street has recorded the highest NOR, with 597 observations, and Old Burlington Street the lowest, with 22 observations

Next, the histogram in figure 5.1a(i) is the frequency distribution of the NOR in the eighteen streets. It gives the mean value or the average of this distribution as 181.11. This value sets the parameter of the total of NOR in the area, making it a benchmark for evaluating, whether the distribution of NOR in each street is above or below the average. Finally, the following table in figure 5.1a(ii) provides the sum of streets, each with its frequency distribution of NOR. Eleven, i.e. 60%, of the eighteen streets emerged below this average, and seven, i.e. 40%, are above it.

The 40% of streets which are above the average of the total of NOR indicates that less than half of the streets are highly occupied by static activities. This demonstrates that an imbalanced proportion of the streets have effectively been used for people executing static activities rather than dynamic activities. This implies that a large proportion of the streets has been functioning more as 'through-streets', where

people mainly walk (executing dynamic activities) to go from one place to another, and less as 'places' where people stop, talk, sit, browse or simply watch other people (executing static activities). This raises the very first important paradox of the main use, specifically the main function of these streets. As shopping streets, these streets should have been functional for people walking and stopping. Why are these two functions imbalanced?



In order to investigate the above paradox, firstly a detailed analysis of the total of NOR (3260) is carried out (table 5.3). The first column splits the NOR in each parcel (A, B, C, D, E, and F in the main column A) of the area. The following two columns (in the main column B) break up the NOR according to the two days observed (the observation was carried out on Thursday in order to represent the weekday, and Saturday the weekend). The next three columns (in the main column C) split the NOR as observed at three different periods (at 0930-1130, 1230-1430, and 1730-1930). Finally, the last three columns (in the main column D) split the NOR according to its type (N, O, and R activities).

The first column shows that of a total 3,260 NOR were observed in the whole area. When it is split according to the individual parcel, its highest was recorded in parcel B, with 691 observations, and its lowest in parcel E, with 456 observations. This clearly shows that some of these parcels are more highly occupied with static activities than others. This shows that the NOR has been distributed differently, not just between the eighteen streets but also between each parcel of the studied area. This leads to further detailed analyses in the following sections, a, b and c, concerning the micro distribution of NOR in the area.

STREET	A) DISTRIBUTION OF NOR PER PARCEL	B) DISTRIBUTION OF NOR PER DAY OF OBSERVATION		C) DISTRIBUTION OF NOR PER TIME OF OBSERVATION			D) DISTRIBUTION OF EACH TYPE OF STATIC ACTIVITIES		
		THU	SAT	0930- 1130	1230- 1430	1730- 1930	N	O	R
Regent Street I/II		192	101	63	160	70	149	39	105
Margaret Street		88	25	27	78	8	58	0	55
Great Castle Street		51	12	14	41	8	37	8	18
<b>PARCEL A</b>	<b>469</b>								
New Bond Street		245	352	173	404	20	468	3	126
Maddox Street		33	39	13	58	1	33	7	32
Old Burlington Street		16	6	3	19	0	14	1	7
<b>PARCEL B</b>	<b>691</b>								
Regent Street III/IV		137	230	73	231	63	257	4	106
Conduit Street		51	9	11	44	5	38	8	14
Hanover Street		43	42	17	45	23	54	7	24
<b>PARCEL C</b>	<b>512</b>								
Regent Street V		53	151	34	129	41	181	2	21
Gt. Marlborough Street		163	67	95	90	45	123	12	95
Kingly Street		59	23	31	39	12	40	2	40
<b>PARCEL D</b>	<b>516</b>								
Regent Street VI/VII		63	152	25	155	35	175	6	34
Beak Street		35	38	18	41	14	41	8	24
Brewer Street		65	103	39	83	46	83	7	78
<b>PARCEL E</b>	<b>456</b>								
Wardour Street		178	163	80	156	105	135	10	196
Berwick Street		74	93	49	83	35	88	6	73
Broadwick Street		74	34	35	51	22	44	6	58
<b>PARCEL F</b>	<b>616</b>								

Table 5.3. This table shows a break-down of the distribution of NOR in the individual streets split according to the parcel (A), the day (B), the time observed (C), and the type of static activities (D).

#### a. Distributions of NOR According to Days Observed

Table 5.3 shows that 1,620 observations of NOR were recorded on Thursday, and 1,640 on Saturday (see also map Thursday and Saturday). These simply show that only small differences of NOR occurred between the weekday and the weekend. However, the bar chart (figure 5.2a), which ranks the NOR in each street according to the two days observed, shows that some streets have recorded significantly higher NOR on weekdays than on the weekend, and vice versa. For example, New Bond Street recorded a lower NOR during the week, with 245 observations, than on the weekend, with 352 observations. In contrast, the north part of Regent Street I/II, has recorded a higher NOR on a weekday, with 192 observations, than on a weekend, with 101 observations.



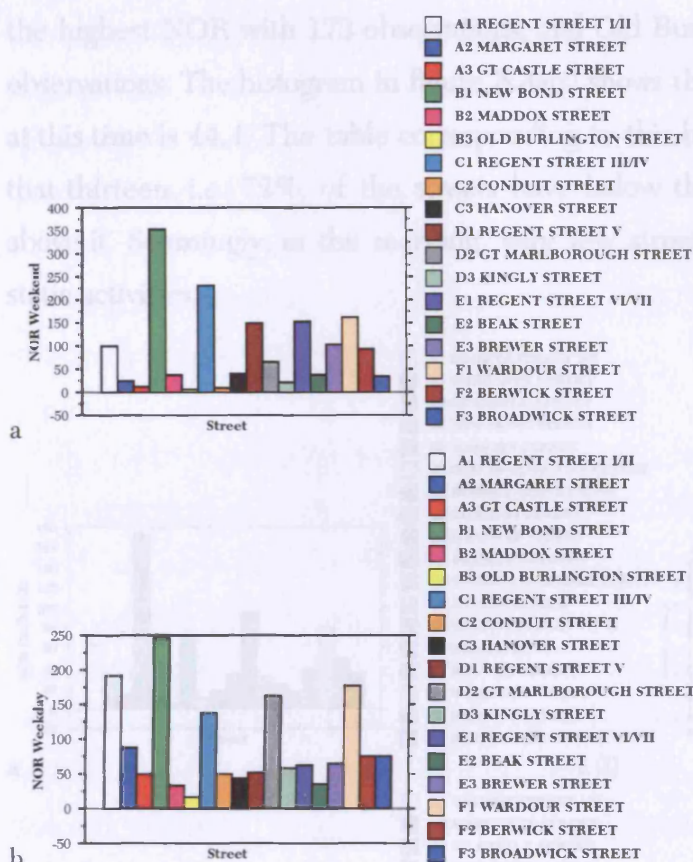


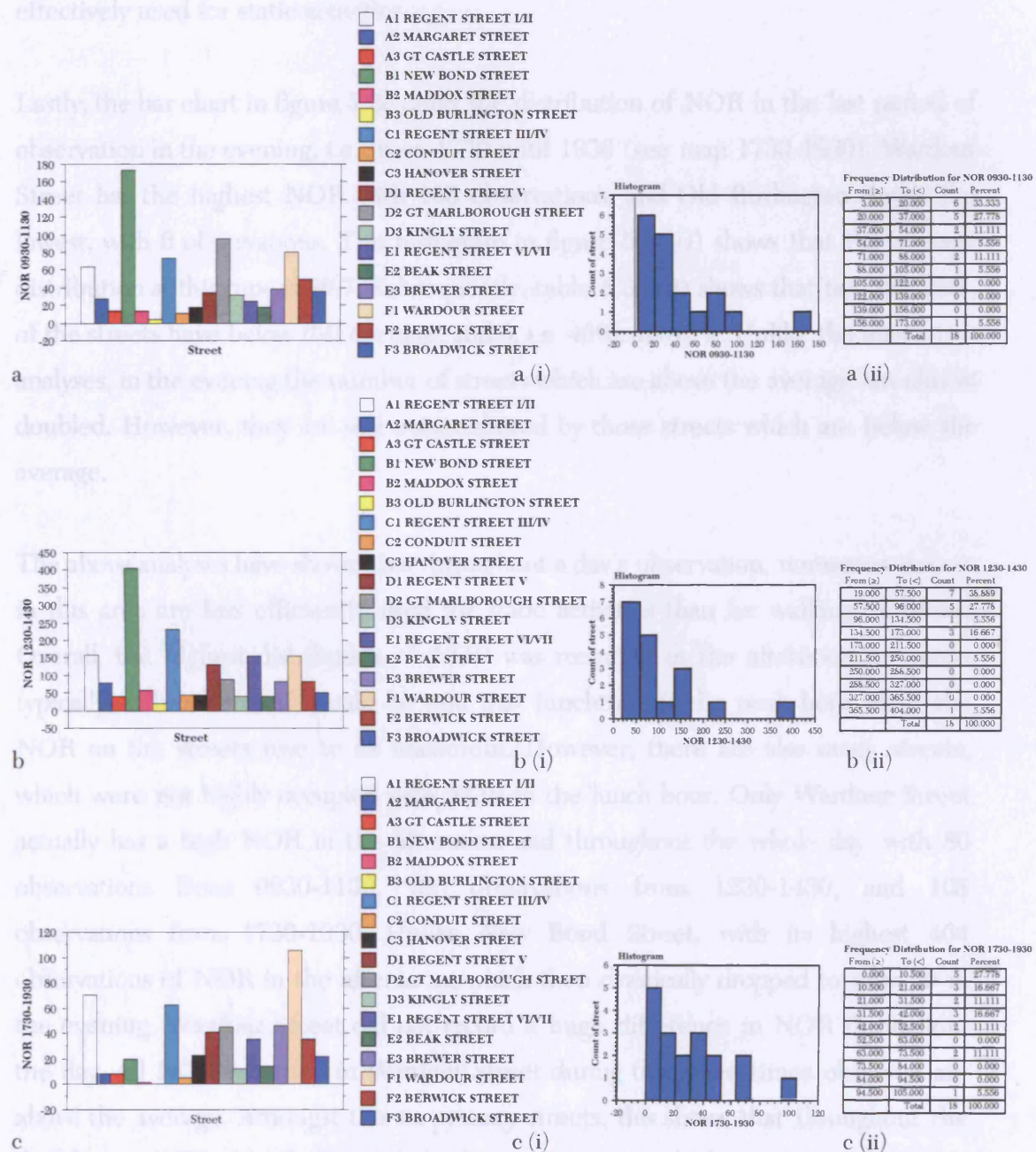
Figure 5.2 A bar chart shows the distribution of NOR in the individual streets observed on a) Thursday and b) Saturday

It is important to note that the above two streets are in the same category, i.e. the primary ones in this area. Once a huge difference of NOR in the different days observed was recorded on these two similar types of streets, it needs an explanation. Perhaps, this was caused by some extra occasional (could also be seasonal) static activities in some streets, which were observed only during the weekend. The occasional activities consist of the increase amount of people distributing leaflets (involving retail operator or charity organisers), ice cream and street vendors operating only at the weekend. However, before concluding that they are the cause of the huge difference in the distribution of NOR, its other micro aspect of distribution in the streets needs an investigation.

## b) Distribution of NOR at Three Time-Periods Observed

The above leads to an analysis of whether the distribution of NOR varies at different times of the day. The bar chart in figure 5.3a ranks this distribution in the morning,

i.e. from 0930 until 1130 (see map 0930-1130). At this time, New Bond Street has the highest NOR with 173 observations, and Old Burlington the lowest with only 3 observations. The histogram in figure 5.3a(i) shows the average distribution of NOR at this time is 44.4. The table corresponding to this histogram, figure 5.3a(ii), shows that thirteen, i.e. 72%, of the streets have below this average, and five, i.e. 28%, above it. Seemingly, in the morning, very few streets in this area are occupied by static activities.



Figures 5.3a, b and c are the bar charts of the distribution of NOR in the individual streets at 0930-1130 in the morning, 1230-1430 in the afternoon, and 1730-1930 in the evening. Figures 5.3a(i), b(i), c(i) are the histograms of the frequency distribution of NOR in each street. Figures 5.3a(ii), b(ii) and c(ii) are the corresponding tables to the histograms, listing the quantity of streets with their respective frequency distributions of NOR.

Next, the bar chart in figure 5.3b ranks the distribution of NOR in the afternoon, i.e. from 1230 until 1430 (see map 1230-1430). New Bond Street once again has the highest NOR with 404 observations, and Old Burlington Street the lowest, with 19 observations. The corresponding histogram in figure 5.3b (i) gives the average of this distribution as 105.9. The subsequent table in figure 5.3b (ii) shows that twelve, i.e. 67%, of the streets are below this average and six, i.e. 28%, are above it. As in the morning, this result shows that in the afternoon too only a few streets in the area are effectively used for static activities.

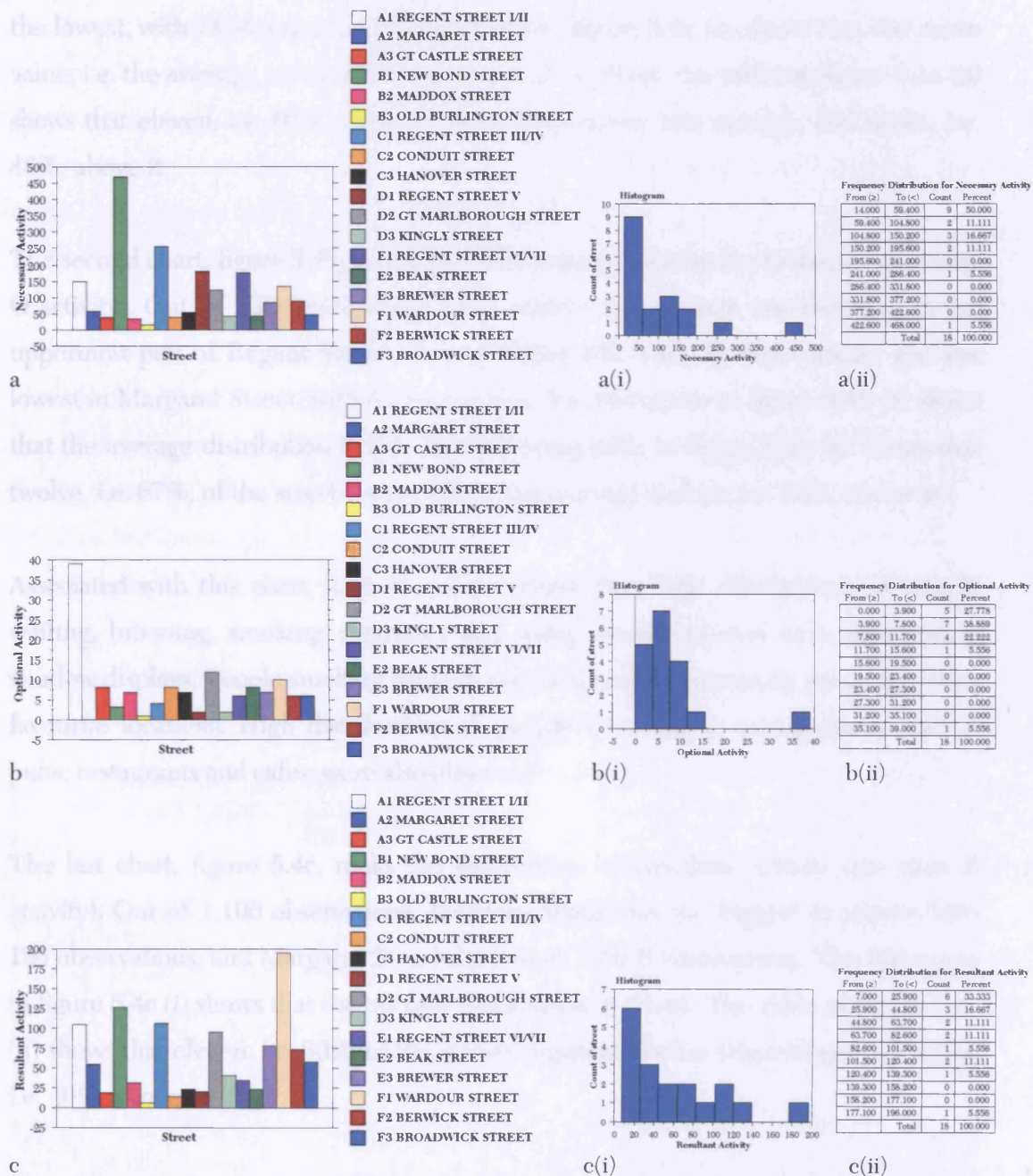
Lastly, the bar chart in figure 5.3c ranks the distribution of NOR in the last period of observation in the evening, i.e. from 1730 until 1930 (see map 1730-1930). Wardour Street has the highest NOR with 105 observations, and Old Burlington Street the lowest, with 0 observations. The histogram in figure 5.3c (i) shows that the average distribution at this time is 30.7. Subsequently, table 5.3c (ii) shows that ten, i.e. 56%, of the streets have below this average, and 8, i.e. 46%, above it. Unlike the above two analyses, in the evening the number of streets which are above the average has almost doubled. However, they are still outnumbered by those streets which are below the average.

The above analyses have shown that throughout a day's observation, numerous streets in this area are less efficiently used for static activities than for walking activities. Overall, the highest distribution of NOR was recorded in the afternoon, or more typically, at lunchtime. It could be said that lunchtime is the peak hour when the NOR on the streets rose to its maximum. However, there are also many streets, which were not highly occupied with NOR in the lunch hour. Only Wardour Street actually has a high NOR in the afternoon and throughout the whole day, with 80 observations from 0930-1130, 156 observations from 1230-1430, and 105 observations from 1730-1930. Unlike New Bond Street, with its highest 404 observations of NOR in the afternoon, which then drastically dropped to only 20 in the evening, Wardour Street did not record a huge difference in NOR throughout the day. All NOR recorded in Wardour Street during the three times observed are above the average. Amongst the six primary streets, this shows that throughout the day observed, Wardour Street is the only primary street which is consistently highly occupied by static activities. This requires another micro analysis of the more



contributory types of static activities in relation to the high distribution of NOR on some streets.

### c) Distribution of NOR according to Types



Figures 5.4a, b and c, the bar charts on the distribution of Necessary, Optional and Resultant activities in the individual streets. Figures a(i), b(i) and c(i) are the corresponding histograms of the analysis of the frequency distributions of these activities. Figures a(ii), b(ii) and c(ii) are the tables on the counts of streets with their respective frequency of distributions of each type of static activity.

Responding to the above, this section analyses the distribution of NOR according to its types: the Necessary, Optional and Resultant activities.

The first bar chart, figure 5.4a, ranks the distribution of Necessary activity in the eighteen streets (see also map N activity). Out of 2,018 observations of N activity, New Bond Street has the highest, with 468 observations, and Old Burlington Street the lowest, with 14 observations. The histogram, figure 5.4a (i), shows that the mean value, i.e. the average, of this distribution is 112.11. Next, the table in figure 5.4a (ii) shows that eleven, i.e. 60%, of the streets, have below this average, and seven, i.e. 40%, above it.

The second chart, figure 5.4b, ranks the distribution of Optional activity (see also map O activity). Out of 136 observations of O activity, the highest was recorded in the uppermost part of Regent Street, Regent Street I/II, with 39 observations, and the lowest in Margaret Street, with 0 observations. The histogram in figure 5.4b (i) shows that the average distribution is 7.6. The following table in figure 5.4b (ii) shows that twelve, i.e. 67%, of the streets, were below this average and six, i.e. 33%, above it.

Associated with this chart, map N activity shows that high distributions of people waiting, browsing, smoking cigarettes and using mobile phones were observed at window displays. People smoking were mostly observed at entrances, seemingly their favourite locations. High distributions of people browsing at eating-places such as pubs, restaurants and cafes, were also observed.

The last chart, figure 5.4c, ranks the distribution of Resultant activity (see map R activity). Out of 1,106 observations, Wardour Street has the highest R activity with 196 observations, and Margaret Street the lowest, with 0 observations. The histogram in figure 5.4c (i) shows that the average distribution is 61.44. The table in figure 5.4c (ii) shows that eleven, i.e. 60%, of the streets registered below this average and seven, i.e. 40%, above it.

Map R activity also shows that Wardour Street is by far the highest occupied street by R activity in the area. Perhaps this high occupation of R activity explains why Wardour Street is the only primary street in the area that is also consistently highly occupied by static activities throughout the whole day observed (see section 5.1.1b). It is



particularly interesting to observe that people were chatting, standing and watching other people - instead of sitting whilst eating or drinking – activity that particularly occupied the outside eating-places on Wardour Street.

A high distribution of people chatting in groups was also consistently observed in Kingly Street, i.e. a tertiary street, though not in a primary street like Regent Street (see map C). Being a tertiary street, Kingly Street is located away from the loud noise generated by heavy traffic: hence, it may be more conducive to static activities. Alternatively, perhaps there exist many building indents in the buildings fronting this street, and these indents may be conducive to and help increase static activities (see maps Land use and BE in part II of this chapter).

Overall, this section shows that the presence of a certain type of static activity could vary with the distribution of NOR in the eighteen streets studied. Of the three types of static activities, O activity emerges as the lowest in most streets in this area. Have any of these types of static activity been attracted to a particular type of physical design element in the street? To answer this question an analysis of the distribution of NOR on the three types of physical design elements in the eighteen streets needs to be attempted. This brings out another micro aspect of analysis of this distribution.

### 5.1.2 Distribution of Socio-physical Variables

MAIN CATEGORY OF PHYSICAL DESIGNS	DETAILED CATEGORY OF PHYSICAL DESIGNS	NOR PER DETAILED CATEGORY OF PHYSICAL DESIGNS	% NOR PER PHYSICAL DESIGN
Street Element (S.E)	Pavement Edges	442	18.0
	End of Streets	109	3.0
	Public Facilities	75	1.0
<b>Sub-Total</b>		<b>726</b>	<b>22</b>
Building Element (B.E)	Public Private Entrances	320	10.0
	Building Facades	141	4.0
<b>Sub-Total</b>		<b>461</b>	<b>14</b>
Land use Element (L.E)	Window Displays	1560	49.0
	News Agents	33	1.0
	Cash Points	105	3.0
	Eatery Places	375	11.0
<b>Sub-Total</b>		<b>2073</b>	<b>64</b>
<b>TOTAL</b>		<b>3260</b>	<b>100</b>

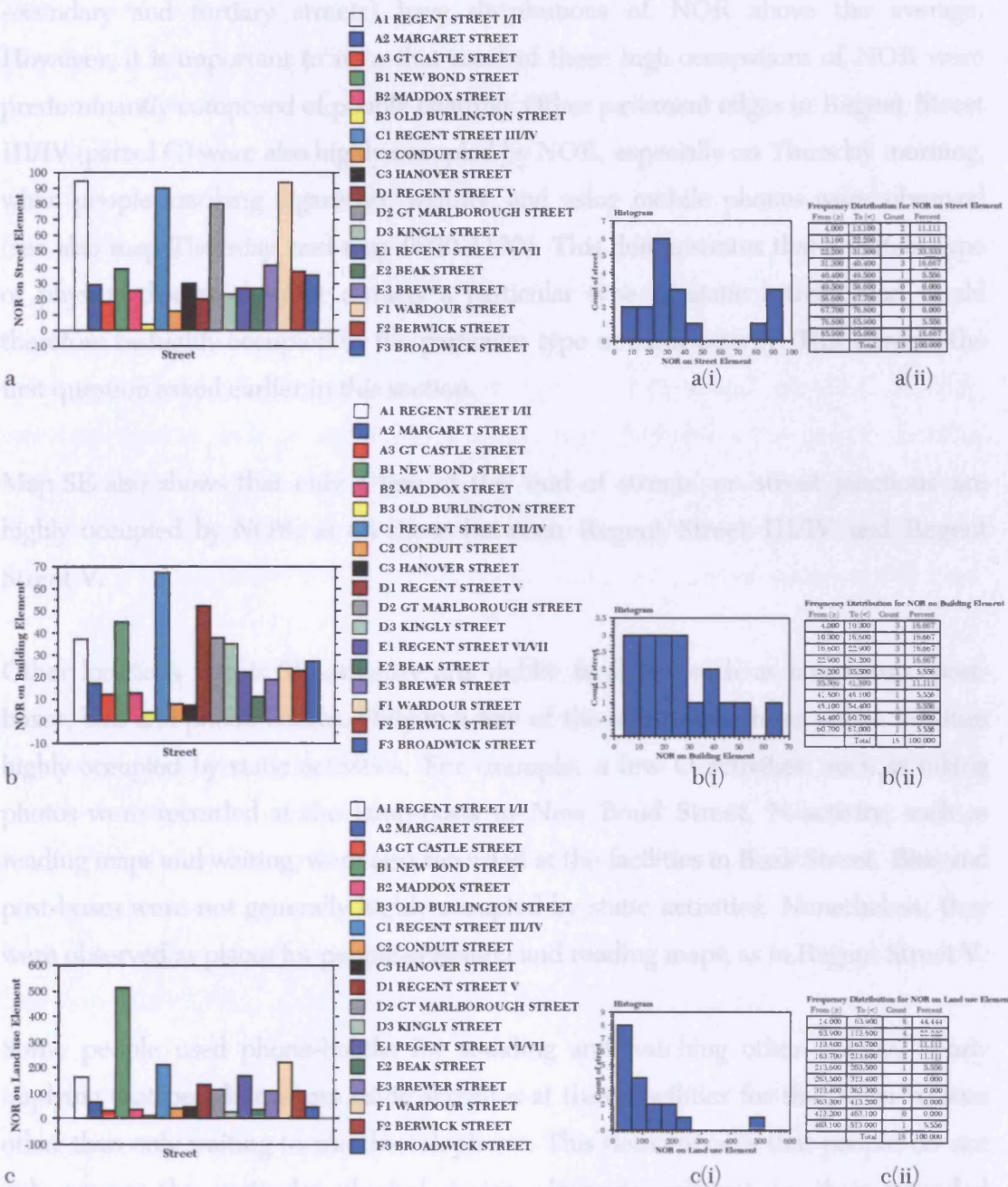
Table 5.4 A break up of the distribution of NOR on the three main categories of the physical design elements, SE, BE, LE, and on the respective detailed physical locations in the three main categories.

Table 5.1 tabulates the distribution of NOR on the SE, BE, and LE. 726 observations of NOR were recorded on SE, 461 on BE, and 2073 on LE - making LE the physical design element the most occupied by static activities. Table 5.4 (the third column) further splits each of these distributions on the detailed physical locations (grouped according to the main categories of these physical design elements). Accordingly, the last fourth column provides the percentage of occupation of static activities in these detailed locations.

In the SE category, 442 observations, i.e. 18% of the total of NOR in the area, were recorded on 'pavement edges', making them the most occupied locations by static activities in this category. In the following BE category, 'public private entrances' have the highest distribution of NOR, with 257 observations, i.e. 10% of the total of NOR.

Finally, two detailed physical locations in the LE category have high distributions of NOR. 'Window displays' the highest distribution, with 1,201 observations, i.e. 49% of the total of NOR, followed by 'eating places' with 296 observations, i.e. 11% of the total of NOR. Amongst all of these detailed physical locations, the window displays are by far the location most occupied by static activities. The above raises questions: how has a high occupation of NOR occurred in relation to a particular type of physical design element? Does it indicate that a particular type of design element attracts a particular type of static activity? These questions are answered by applying the preceding statistical analyses to the distribution of NOR on the three main categories of the physical design elements (Table 5.1 is continuously being referred to for the following analyses).

Firstly, the bar chart in figure 5.5a ranks the distribution of NOR on the SE in the eighteen streets (see map SE). The chart shows that its highest distribution was recorded on several streets, including Regent Street I/II with 95 observations, Wardour Street with 94, and Regent Street III/IV with 90. The following histogram, figure 5.5a (i), shows the respective frequency of this distribution in the eighteen streets, giving an average of 40.3. Next, Table 5.5a (ii) shows that fourteen, i.e. 77%, of the streets have below this average and four, i.e. 23%, above it.



Figures 9.5a, b, c are the bar charts of the distributions of NOR in Street Element (SE), in Building Element (BE) and in Land use Element (LE) in the individual streets. Figures a(i), b(i), c(i), are the respective histograms of the frequency distributions of NOR on these physical design elements. Tables a(ii), b(ii) and c(ii), are the counts of streets with their respective frequency distributions of NOR on all physical design elements in them.

It is interesting to compare the above distribution in Gt. Marlborough Street to that in Regent Street V (parcel D, map SE). The former, which is a secondary street, has a higher distribution of NOR than the latter, which is a primary street. However, a different case was recorded in the Soho area (parcel F), where the 'pavement edges' in all streets (Wardour Street, Berwick Street, and Broadwick Street; the primary,



secondary and tertiary streets) have distributions of NOR above the average. However, it is important to note that most of these high occupations of NOR were predominantly composed of people chatting. Other pavement edges in Regent Street III/IV (parcel C) were also highly occupied by NOR, especially on Thursday morning, when people smoking cigarettes, waiting, and using mobile phones were observed (see also map Thursday, and map 0930-1130). This demonstrates that a certain type of physical design element attracts a particular type of static activity, and would therefore be highly occupied by the particular type of static activity. This answers the first question asked earlier in this section.

Map SE also shows that only a few of the 'end of streets' or 'street junctions' are highly occupied by NOR, as on those between Regent Street III/IV and Regent Street V.

Other locations in this SE category are 'public facilities' such as lamp-posts, post-boxes, bins and phone-booths. Only in a few of the streets are these public facilities highly occupied by static activities. For example, a few O activities, such as taking photos were recorded at the lamp-posts in New Bond Street. N activity, such as reading maps and waiting, were also recorded at the facilities in Beak Street. Bins and post-boxes were not generally highly occupied by static activities. Nonetheless, they were observed as places for people-watching and reading maps, as in Regent Street V.

Some people used phone-booths for standing and watching other people, clearly implying that people execute static activities at these facilities for their own reasons other than only waiting to use the telephone. This demonstrates that people do not only occupy the particular physical design elements relevant to their intended purposes, but will also impulsively use any of the them as suitable to their own needs. Like the earlier R activity observed in Wardour Street, evidently people spontaneously stopped and executed static activities at 'places' or at any physical design element where they found it appropriate. This shows that a particular type of physical design element not only attracts a particular type of static activity to it, but also attracts other types of static activities, which are not relevant to its intended design purposes.

The second bar chart, figure 5.5b, ranks NOR on the BE in the eighteen streets (see map BE). The highest NOR on BE was recorded in Regent Street III/V with 67 observations, followed by Regent Street V, New Bond Street, and Great Marlborough Street. The following histogram, figure 5.5b(i), shows that the average of NOR on this element is 25.6. The corresponding table, figure 5.5b(ii), shows that twelve, i.e. 67%, of the streets had below this average and six, i.e. 33%, above it.

Map BE shows that all types of static activities were recorded at the indents of buildings. High distributions of people chatting and watching, and eating and drinking, were recorded at these locations. Significantly high distributions of people chatting, were recorded at other detailed locations in this category, as in Berwick Street, Broadwick Street, and Wardour Street (see also map F). People waiting were also recorded at flower boxes in front of hotels and restaurants in some streets in this area.

People smoking, waiting, and eating were observed at 'public private entrances', which were located between the building frontages and the pavement edges in some streets. A high concentration of people smoking and waiting were particularly observed at the entrances in front of some of the offices in Great Marlborough Street. This particular activity is important to note as it depicts a change, which has taken place on contemporary urban streets. This is because, smoking has increasingly been banned from work places, such as offices: office workers therefore normally have to smoke outside in the street (Regent Street Association 2000).

High distributions of people waiting were also recorded at several entrances to the photocopy and film shops in Brewer Street. People eating were recorded on the steps at the entrances to some shops in Regent Street III/IV. This particular observation shows that a repetitive pattern of a certain type of static activity occurred at building entrances, similar to the repetitive use of pavement-edges by people chatting. This again demonstrates that a certain type of physical design attracts a particular type of static activity.

Finally, the bar chart, figure 5.5c, ranks the distribution of NOR on the LE category in the individual streets (see map LE). The histogram in figure 5.5c (i) shows its frequency distribution with an average of 115.2. The following Table 5.5c (ii) shows

that fourteen, i.e. 77%, of the streets are below this average and four, i.e. 23%, above it.

Accompanying the chart above, map LE shows that significantly high distributions of people browsing are observed at window displays in New Bond Street, Wardour Street, and Maddox Street. Some window displays however, were not only used for browsing, but also for waiting, people making calls through their mobile phones, and chatting as in Regent Street. Perhaps the existence of these mixed types of static activities at window displays explains why the highest distribution of NOR was observed there.

The next physical design in this LE category, the newsagent, at the junction of Berwick Street and Broadwick Street, showed a high distribution of people chatting, especially in the morning (see map 0930-1130). In other instances, a few newsagents on some streets showed higher NOR during the week than on the weekend (see maps Thursday and Saturday). These newsagents seem to be more serviceable to the local weekday workers in the area. It is also important to note that most newsagents in this area are located in the secondary and tertiary streets. Perhaps this physical design feature would be more appropriately located on secondary and tertiary streets than on primary streets.

The next physical design is the cash-point. Some cash-points were mostly occupied by static activities in the week and less on the weekend as in Great Castle Street and Margaret Street. In contrast, the cash-points in Regent Street III/IV, Hanover Street and Conduit Street were mostly occupied by static activities on the weekend and less in the week. At other cash-points, static activities were observed both during the week and on the weekend (see also map Thursday and Saturday). In these cases, it is important to note the high distribution of static activities which was recorded at the cash-point in Regent Street III/IV, the primary street in the area. Seemingly, cash-points would be more appropriately located on a primary street rather than on secondary or tertiary streets. Although this might be the case, the cash-points on New Bond Street and Regent Street I/II (both of which are the primary streets in the area), were less occupied by static activities than those on Margaret Street (a secondary street) and Great Castle Street (a tertiary street).

The last physical design in the LE category is the 'eating-places', which include cafes, pubs, restaurants, etc. People browsing and standing in front of these physical designs were recorded especially in the morning on several streets such as Great Marlborough Street. This is interesting, as one would normally expect to observe people eating and drinking (executing O activity), instead of standing, watching, using mobile phones (executing N activity), and chatting (executing R activity) at such eating-places. These similar random and mixed aspects of static activities observed at some physical designs in Wardour Street were highlighted earlier (see section 5.1.1c). This might explain why these eating-places the physical design second most occupied by static activities in this LE category.

This section shows that the highest the location occupied by NOR is LE. However, not all the LE in the eighteen streets were highly occupied by NOR. This leads to the last analysis of this section, which investigates the impact of other physical aspects of the street on the distribution of NOR in the studied area.

### **5.1.3. Distribution of Syntactic(al) Variables**

The last column in table 5.1 shows the local integration values ( $r_3$ ) of the eighteen streets in the area. This syntactic(al) variable addresses the spatial relation between static activities and the connectivity of the streets within the studied area.

'Space Syntax' analysis is applied to these streets, following natural movement theory as developed by Hillier et al. (1992). The 'Axman' computer software of this space syntax method performs an 'axial line analysis', which produces an 'axial map'. This technique is applied to these streets in order to calculate their local ( $r_3$ ) and global integration ( $r_n$ ) values. These integration values give the local and global levels of connectivity of the eighteen streets.

The basic argument in space syntax is that the pattern of moving activities (inclusive of pedestrians, cyclists, traffic, etc) within the urban area is significantly influenced by the configuration of the urban grid (Penn, et. al. 1992). This configurative measurement, which is represented as the integration value of the particular street, represents the 'chances' (probability) of the street being highly used for pedestrian movement within the network of streets in the particular area. *The higher the chances*

*of the particular street being used for movement the more accessible it probably is to the pedestrian, whilst the lower the chances of it being used the less accessible (ibid.).*

Generally, the integration value of each street is measured depending on the radius of the boundary of the particular area, or the space in question. The radius of this particular area represents the distance of its boundary. This distance is measured as the integration value of the particular street in the local or global configuration of the particular area. These local and global integration values account for the movement of both pedestrians and traffic. The former accounts for pedestrian movement whilst the latter accounts for the movement of traffic within the boundary of the area.

#### **a. The Global and Local Spatial Connectivity of Streets**

In accordance with the space syntax principle, the global integration value is the measure of the level of connectivity of the streets to another network of streets within the global boundary of the area. This is referred to as the 'global axial line' analysis, which produces a 'global axial map' of the eighteen streets with the surrounding streets in the area (see figure 5.6a). The local integration value is the measure of the level of connectivity of these eighteen streets to the other network of streets within the local boundary of the area. This is termed the 'local axial line' analysis, and produces the 'local axial map' of the particular eighteen streets in the area (see figure 5.6b).

Every street on these axial maps is considered as one 'space'. Each 'space' is represented by one line of the 'spatial configuration', or the 'topology of the space' within the particular area. This line represents the level of connectivity of the particular street to another network of streets in the area.

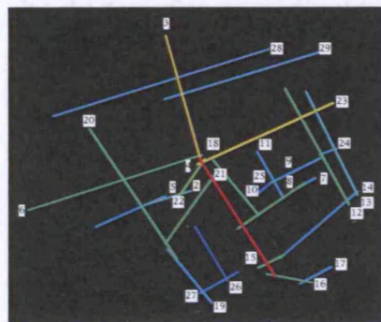
Conceptually, this line 'represents' the 'line of movement' of the dynamic activities of people and traffic. Several of these lines will form one completely global space, or the 'spatial configuration' of the particular area (Hillier et al. 1992, Peponis 2001). The axial line analyses of these streets determine whether they are high-integrated, medium-integrated or low-integrated to the other network of streets within this 'spatial configuration' of the particular area. The red lines in these axial maps represent the highest or most integrated spaces (i.e. the streets) in the area, the



yellow lines represent the moderately integrated spaces, and the blue lines represent the least integrated (i.e. the 'segregated') spaces.



a)



b)

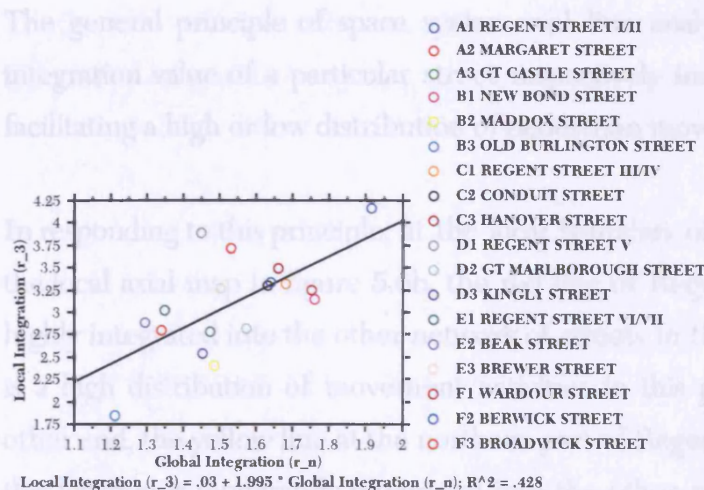
	STREET	r_n	r_3	NOR
P	Regent Street I/II	1.915	4.159	293
S	Margaret Street	1.534	3.705	113
T	Great Castle Street	1.473	2.781	63
P	New Bond Street	1.763	3.139	597
S	Maddox Street	1.489	2.397	72
T	Old Burlington Street	1.213	1.833	22
P	Regent Street III/IV	1.683	3.317	367
S	Conduit Street	1.634	3.301	60
T	Hanover Street	1.662	2.485	85
P	Regent Street V	1.448	3.883	204
S	Great Marlborough Street	1.575	2.805	230
T	Kingly Street	1.454	2.524	82
P	Regent Street VI/VII	1.348	3.022	215
S	Beak Street	1.295	2.877	73
T	Brewer Street	1.503	2.252	168
P	Wardour Street	1.756	3.238	341
S	Berwick Street	1.640	3.133	167
T	Broadwick Street	1.340	2.784	108

Table 5.5. The above table shows the global integration ( $r_n$ ), the local integration ( $r_3$ ) values of the individual streets, and the NOR observed on the eighteen streets. The integration value measures the spatial configuration or the topology of these streets within the local and global network of the streets in the urban space (Hillier et. al 1992).

Figure 5.6. On the left, a) is a map on the global axial line analysis and b) on the local axial line analysis of the streets in the studied area.

The value of each line in these axial maps is calculated as the 'integration value' of each of the eighteen streets. In addition to these maps, table 5.5 represents the global and local integration values of these eighteen streets.

The relationship between the global and local axial values of the eighteen streets is then analysed. The scattergram in figure 5.7a shows the relationship between these local and global integration values. It shows the 'mean' global integration value of these streets is 1.540, whilst the 'mean' of their local integration value is 3.102. This means that, at the global boundary of the area studied, these eighteen streets are highly integrated (highly connected) to the other network of streets in the area, whilst at the local boundary, the streets are less integrated (less connected) to the other network of streets in the area.



Local Integration Value	$r_n$	
	$r$	$r^2$
$r_3$	0.654	0.428

a) Figure 5.7. A scattergram (a) and a correlation matrix (b), which show the correlation coefficient ( $r$ ) and coefficient determination ( $r^2$ ) between  $r_n$ , the global configuration of space and  $r_3$ , the local configuration of space. This represents the relationship between the global and local distributions of movement in the area studied.

Next to the scattergram, the table in figure 5.7b shows the correlation matrix of the relationship between the global and local integration values of the eighteen streets. The correlation coefficient ( $r$ ) value of this relationship is 0.654 and its coefficient determination ( $r^2$ ) is 0.428. This means that the local integration of the eighteen streets is highly correlated with the global integration of the 'spatial configuration' of the studied area. This also means that the 'synergy', or the 'interaction' between the local and the global integrations of the streets in the spatial configuration of this area, is well correlated. This implies that the distribution of movement activities in the local and global boundary of the streets is inherently affected by the spatial configuration of the area.

## b. The Local Connectivity of Streets to Distributions of NOR

As this thesis concerns analysing the spatial relation, that is the connectivity of streets with respect to their aspects of use by pedestrian static activities, the integration value that is relevant would be the local integration value, that is the  $r_3$  values of the eighteen streets. This is because the  $r_3$  value of streets is the specific axial line analytical measure relevant to (the) pedestrian movement in the spatial configuration of the urban space.

The general principle of space syntax axial line analysis states that a high or low integration value of a particular street respectively implies the street's capability of facilitating a high or low distribution of pedestrian movement (Penn et. al 1992).

In responding to this principle, at the local boundary of this studied area, as shown in the local axial map in figure 5.6b, the red line of Regent Street (21) shows that it is highly integrated into the other network of streets in the area. It indicates that there is a high distribution of movement activities in this part of Regent Street. At the other end, the yellow line at the northern part of Regent Street I/II (3) indicates that this location is moderately integrated into the other network of streets in the area. This shows that in this particular part of Regent Street there is a moderate distribution of the movement of people. It prompts the question whether the above general principle of the distribution of pedestrian movement indicated by axial line analysis would apply to the distribution of static pedestrian activities in these two areas of Regent Street.

The above question is first addressed by comparing the distribution of NOR on the eighteen streets with their each respective  $r_3$  value (see table 5.5). Table 5.5 shows that some streets with high  $r_3$  values has not recorded high distributions of NOR. This particular finding contradicts the space syntax principle. It implies that in reality, the streets with high  $r_3$  values do not manifest a strong chance of facilitating a high concentration of static activities. These highly integrated streets may be highly accessible to a pedestrian's walking activities, but not to a pedestrian's static activities.

Following the space syntax analysis investigating the above, the distribution of NOR in each street is correlated with its respective  $r_3$  value. The regression graph of this correlation analysis in figure 5.8 shows  $r=0.374$  and  $r^2=0.14$ . This means that the spatial configuration of the local distribution of the movement of people, based on radius 3 of the distances pedestrians walk, has influenced 14 % of the distribution of pedestrian static activities in this area. It also indicates that the local configuration of these streets only provides 14 % accessibility to pedestrian static activities. This raises the question whether there might be other physical aspects of the streets (besides their spatial configuration) which might have affected their accessibility to pedestrian static activities. This question is later addressed in section 5.4, which analyses the strength of the relationship between the physical designs occupied by static activities



to the  $r_3$  value of these streets, in order to configure their accessibility in accommodating and distributing static activities in the area.

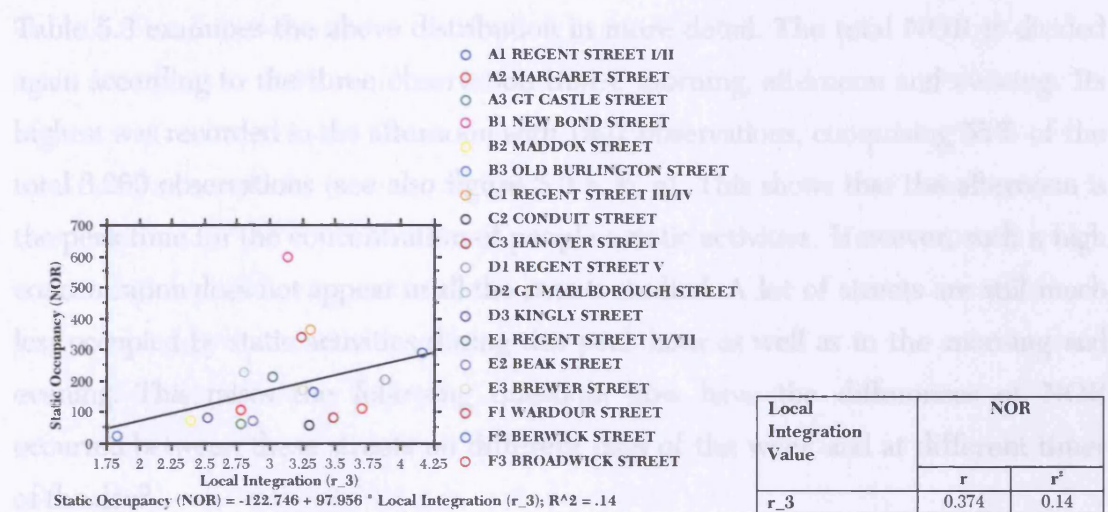


Figure 5.8 A scattergram above demonstrates the relationship between integration value ( $r_3$ ), the local configuration of space, and the distribution of NOR in eighteen streets studied.

This last section has analysed the connectivity of the streets in order to understand the third aspect, that is, the spatial relation of static activities to the local and global network of streets in the area. By addressing this spatial relation of static activities within the local and global network of the streets in the area, the thesis is able to analyse the simultaneous micro and macro distributions of static activities and the physical designs on which static activities are observed.

## 5.2. HIGHLIGHTS OF THE SOCIAL, SOCIO-PHYSICAL, AND SYNTACTICAL VARIABLES IN THE DISTRIBUTION OF NOR

Table 5.1 describes the distribution of the social, the socio-physical, and the syntactic(al) variables of the eighteen streets in the studied area. Subsequently, section 5.1.1 analyses the tabulation. Some statistical analyses are first applied to the total distribution of NOR (3,260 observations) in the studied area. This calculates the frequency distribution of the NOR in each of the eighteen streets observed. The analysis shows that only a few streets (namely, 40%, which is less than half of the total) have recorded above average (181 observations) total distribution of NOR (see figure 5.1a (i) and figure 5.1a (ii)). Table 5.3 shows how the distribution of NOR is split according to the days observed. Some streets are found to be more highly occupied by static activities during the week than at the weekend, and vice versa. However, the

distributions of the NOR observed on the two separate days did not show much difference.

Table 5.3 examines the above distribution in more detail. The total NOR is divided again according to the three observation times: morning, afternoon and evening. Its highest was recorded in the afternoon with 1907 observations, comprising 55% of the total 3,260 observations (see also figure 5.3 a, b, c). This shows that the afternoon is the peak time for the concentration of people's static activities. However, such a high concentration does not appear in all the streets studied. A lot of streets are still much less occupied by static activities during this peak hour as well as in the morning and evening. This raises the following question: how have the differences of NOR occurred between these streets on different days of the week and at different times of the day?

In answering the above question, the total NOR is further examined by splitting it according to its activity types. The last three columns in table 5.3 show that there were 2,018 observations of N activity in the area, comprising about 60%, i.e. more than half, the total NOR. This makes N the highest observed type of static activity. It has contributed the most to the high distribution of NOR in many streets in the area. However, at different times of the day, N activity also appeared in low densities (see maps 0930-1130, 1230-1430, 1730-1930). In New Bond Street, for example, a high distribution of NOR was recorded, which was mainly composed of a high N activity of people browsing at window displays in the morning and afternoon, but not in the evening. In another parcel, Great Marlborough Street, a high N activity of people smoking and using mobile phones by the office entrances was recorded, but only in the morning.

In some other streets, high distributions of NOR with high distributions of R activity instead of N activity were recorded. In Wardour Street, for example, high NOR with a high R activity was recorded, especially in the evening. Other streets such as Margaret Street, Kingly Street, Brewer Street and Berwick Street equal distributions of N and R activities were recorded. Seemingly, the varied distributions of the NOR in the area were affected by certain occupations of the type of static activities in certain streets. This raises the question how a different distribution of each type of static activity occurs between the streets.

This particular question takes the thesis to the next detailed analysis of the micro-distribution of NOR. Section 5.1.2 examines how the varied distributions of NOR have occurred on each type of physical design (SE, BE, LE) in the eighteen streets. Overall, table 5.1 shows that LE recorded by far, the highest NOR compared to the other two physical designs. This has identified LE as key physical locations where static activities are concentrated in the studied streets. This strongly indicates that it is important to include LE in the process of designing streets for people. Such a design could appear in the retail frontages, which should be made conducive to static activities. Inherently, this would help urban designers to integrate the social and physical properties of static activities in the retail frontages of certain patterns of land-uses in the street.

Although LE was the most highly occupied physical design by the NOR, other LEs in some streets have not been so. Table 5.4 splits the NOR according to its occupation of the detailed physical locations in the streets. This table shows that some detailed physical locations in the LE category were more highly occupied by the NOR than others. A particular type of static activity has also been consistently observed on a specific type of physical location. For instance, it is common to observe people smoking at entrances, chatting at pavement edges, and more commonly waiting at cash-points to withdraw money. It is therefore possible to predict a certain distribution of a type of static activity with the presence of a particular type of physical location on certain streets. However, people also carry out spontaneous static activities at these locations. For instance, at window displays, people do not only browse, but they often also wait, chat on their mobile phones, and smoke by them. This implies that people perform static activities based on their personal needs, preferences, culture, etc. These random static activities do not conform to the specific design function of the physical designs. The function of these locations (whether or not they have been designed for people) is clearly not intended for the specific spontaneous static activities of people. It could be argued that people behaved in such a way due to these physical locations having been conducive to their purposes of uses. Are these physical locations the only factor of the streets that have affected the NOR in the area? This question is addressed by analysing the third issue, the spatial implication of static activities in streets.

The last, section 5.1.3 analysed the impact of the syntactic(al) variable (the spatial connectivity) of the streets on the distribution of NOR in the area. According to Space Syntax axial line analysis, the integration value of the individual street represents its level of accessibility to the movement of people in the area. The high integration value of a particular street implies that it is 'highly integrated' or 'highly connected' to other network of streets in the area, suggesting that the highly integrated street is most likely be densely occupied by the movement of people. This dense occupation is related to other urban activities (of people), such as static, social, economic, etc. This highly integrated street is also 'highly visible', and therefore 'highly accessible' to people (Hillier 1996, Campos 2000). A high integration value also represents a street with a higher hierarchy (primary), and a low integration value represents a street with a lower hierarchy (tertiary). Accordingly, the axial maps in figures 5.6a and 5.6b with their corresponding table 5.5 show that the streets with high-integrated values represent the primary ones, and the streets with low-integrated values, the tertiary.

However, table 5.5 also shows that some of these highly integrated streets have not only been observed with high distributions of NOR, but also with low distributions of NOR. This particular finding creates an interesting paradox – as it breaks the above space syntax principle. For this reason, the thesis argues that the highly integrated streets analysed according to space syntax axial line analysis, do not necessarily mean that the particular street is also accessible for static activities of people.

Three important points are drawn from the above analyses: firstly, that a high distribution of a particular type of static activity has had an impact on the different distribution of NOR in streets. Secondly, a particular type of physical design element attracts a particular type of static activity, and this could cause the high distribution of NOR in streets. Thirdly, the high distribution of NOR in a particular street is also affected by its level of local spatial connectivity with the other network of streets in the area. This raises this question: how much these variables influence the social and spatial functions of the street in accommodating and distributing static activities in the area? This is addressed by further analysing the micro distribution of the NOR and its contribution to making the streets sociable and accessible for static activities. This is dealt with by examining the interrelated strengths of the relationships of these



variables in influencing one another in the configuration of the sociability and the accessibility of the street.

## SECTION TWO - THE RELATIONSHIP BETWEEN THE SOCIAL, THE SOCIO-PHYSICAL, AND THE SYNTACTIC(AL) VARIABLES AND THE CONFIGURATION OF THE SOCIABILITY AND ACCESSIBILITY OF STREETS

	Distribution of NOR on Street Element		Distribution of NOR on Building Element		Distribution of NOR on Land use Element		
	r	r <sup>2</sup>	r	r <sup>2</sup>	r	r <sup>2</sup>	
Total Distribution of NOR	0.610	0.372	0.699	0.489	0.971	0.943	SOCIABILITY
r_3	0.409	0.167	0.368	0.136	0.305	0.093	ACCESSIBILITY

Table 5.6. A matrix of the correlation coefficient value (r) and coefficient determination (r<sup>2</sup>) of the relationships between the distribution of NOR on the physical design and the total NOR in the studied area, and the r\_3 of the eighteen streets. The former configures the sociability of the streets and the latter configures their accessibility.

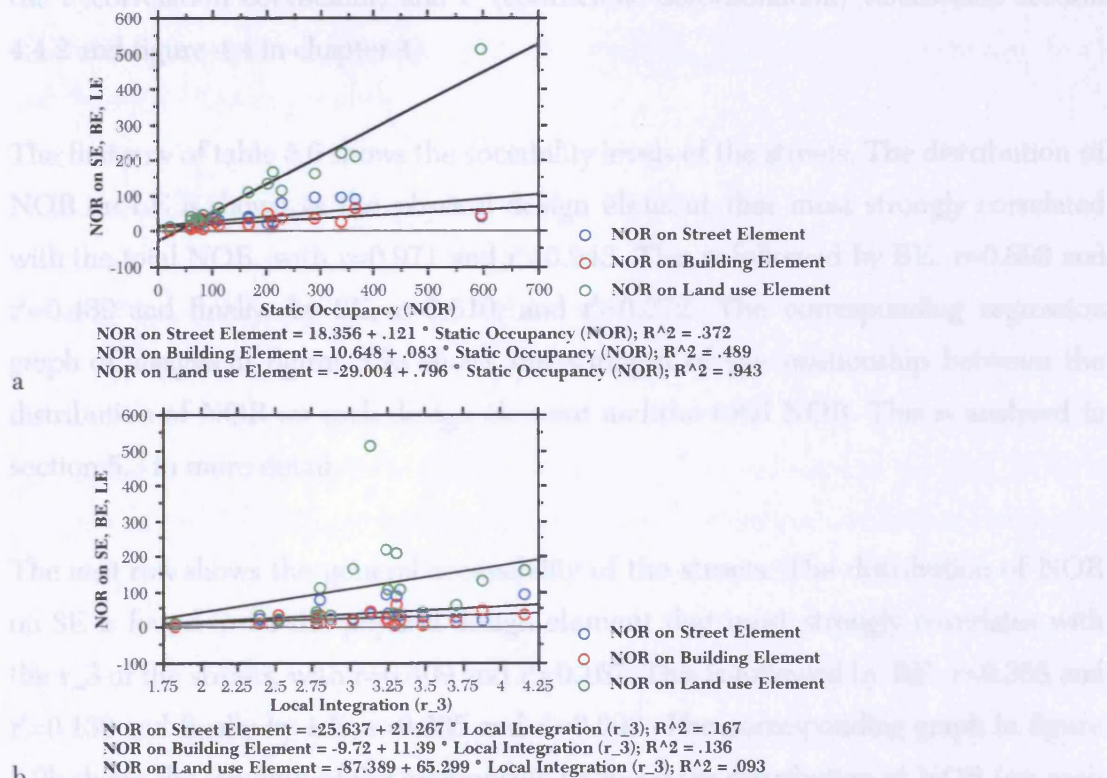


Figure 5.9 The scattergram and regression analyses of the relationship between: (a) the physical design elements occupied by static activities with the distribution of NOR in the area, and (b) the physical design elements occupied by static activities with the local integration value of the streets.

The above leads to these questions. Firstly, for configuring the sociability of the street: would it be possible to predict a certain distribution of NOR in a particular



street by analysing the strength of the relationship, or the ‘potential’ of the physical designs for the occupation of static activities? Secondly, for configuring the accessibility of the street: would it be possible to predict such a distribution of NOR on these physical designs in relation to the local spatial connectivity of the street? Section 5.3 addresses the former. It analyses the strengths of the relationships between the type of static activity and between the distribution of NOR in the physical designs and the total NOR in the area. The following section 5.4 addresses the latter. It analyses the strength of the relationship between these physical designs and the local spatial connectivity of the street.

The relationships between these variables are analysed by using correlation and regression analyses. The matrix in table 5.6 shows the strengths of the relationships amongst these social, socio-physical, and syntactic(al) variables in the configuration of the sociability and accessibility of the streets. These relationships are represented as the  $r$  (correlation coefficient) and  $r^2$  (coefficient determination) values (see section 4.4.2 and figure 4.4 in chapter 4).

The first row of table 5.6 shows the sociability levels of the streets. The distribution of NOR on LE is shown as the physical design element that most strongly correlated with the total NOR, with  $r=0.971$  and  $r^2=0.943$ . This is followed by BE,  $r=0.699$  and  $r^2=0.489$  and finally, by SE,  $r=0.610$ , and  $r^2=0.372$ . The corresponding regression graph of analysis in figure 5.9a shows the strength of the relationship between the distribution of NOR on each design element and the total NOR. This is analysed in section 5.3 in more detail.

The next row shows the general accessibility of the streets. The distribution of NOR on SE is found to be the physical design element that most strongly correlates with the  $r_3$  of the streets, with  $r=0.409$  and  $r^2=0.167$ . This is followed by BE,  $r=0.368$  and  $r^2=0.136$  and finally by LE,  $r=0.305$  and  $r^2=0.093$ . The corresponding graph in figure 5.9b shows the strength of the relationship between the distribution of NOR (on each design element) to the local spatial connectivity of the streets (within their network in the area) in accommodating and distributing static activities. Section 5.4 elaborates this.

### **5.3 CONFIGURING THE SOCIABILITY OF STREETS**

The earlier analyses of the general sociability of the streets in table 5.6 figure 5.9a raise these questions: would high sociability be established on the primary, the secondary, or the tertiary streets? What is the relationship between street hierarchy and sociability levels? These questions are examined from two aspects: firstly, the sociability of the individual street (section 5.3.1); secondly, the sociability of the street separated according to its type - primary, secondary and tertiary (section 5.3.2).

### **5.3.1. Configuring the Sociability of the Individual Street**

In further configuring the sociability of individual streets, this section is divided into three parts. Section 5.3.1a analyses the individual strength of the relationship between the distribution of each type of static activity (N, O, R) and the total NOR in the area. Section 5.3.1b analyses the relationship between the distribution of each type of static activity (N, O, R) and the distribution of NOR on each physical design element (SE, BE, LE). Finally, section 5.3.1c analyses the relationship between the distribution of NOR in relation to each physical design element (SE, BE, LE) in the individual street and the total NOR in the area.

#### **5.3.1a. The distribution of N, O, R to the NOR**

Section 5.1.1c analysed the frequency distribution of each N, O, and R activity in each of the eighteen streets. The distribution of N activity was shown to be the highest in the area, the R and O activities came second and third. This section analyses the strengths of the relationship between each of these distributions and the total NOR in the area (table 5.7). N activity shows the highest correlation coefficient value with  $r=0.950$ , followed by R activity with  $r=0.775$ , and by O activity,  $r=0.178$ .

The scattergram in figure 5.10a shows that  $r^2$  of N activity is 0.903. This means that N activity contributes 90 percent of the total occupation of NOR in the area. Such a high percentage of N activity in this occupation implies a high potential for establishing itself as an important variable in encouraging static activities in streets. Thus, it is also possible to predict the occupation of static activities in certain streets by attracting high distributions of N activity. This graph additionally shows how the N activity in New Bond Street highly correlates with the total NOR as it is close to the regression line (see also table 5.3).

Distribution of each type of static activity	Distribution of N activity		Distribution of O activity		Distribution of R activity	
	r	r <sup>2</sup>	r	r <sup>2</sup>	r	r <sup>2</sup>
Total distribution of NOR in the area	0.950	0.903	0.173	0.03	0.775	0.601

Table 5.7. A correlation matrix between the distribution of each type of static activity in the individual street and the total distribution of NOR in the area.

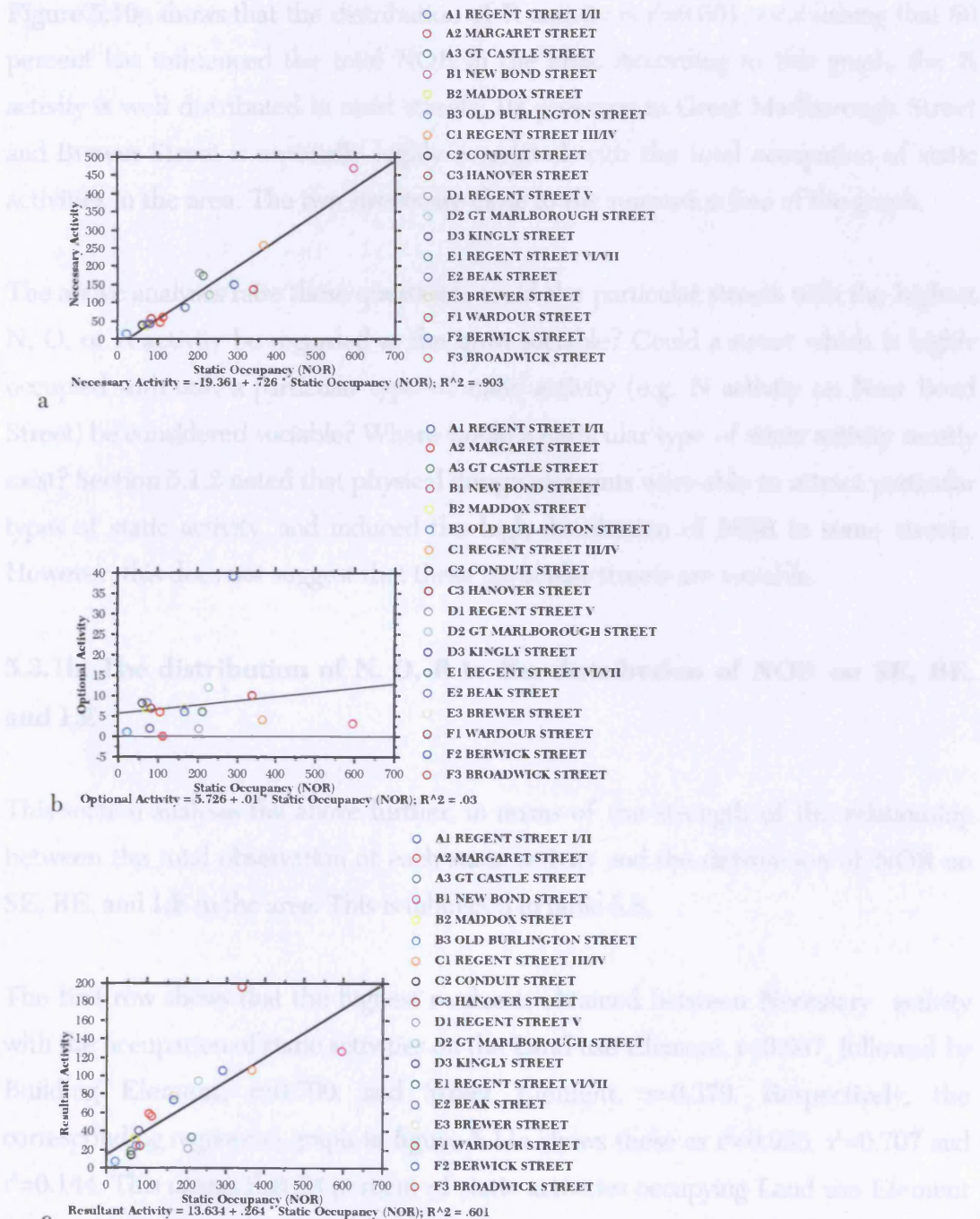


Figure 5.10. The relationship between the distribution of a) N activity, b) O activity, and c) R activity in the individual streets to the total of NOR in the area.

Next, figure 5.10b shows that O activity acquires  $r^2=0.03$ . This means O activity contributes only 3 percent to the total NOR in the area. This is a very weak

correlation, which suggests that O activity has been generally little in evidence in the studied area. This graph shows that Gt. Marlborough Street is close to the regression line, implying that the O activity in this street correlates the highest with the total NOR.

Figure 5.10c shows that the distribution of R activity is  $r^2=0.601$ , establishing that 60 percent has influenced the total NOR in the area. According to this graph, the R activity is well distributed in most streets. Its presence in Great Marlborough Street and Brewer Street is especially highly correlated with the total occupation of static activities in the area. The two streets are close to the regression line of the graph.

The above analyses raise these questions: could the particular streets with the highest N, O, or R activity be regarded as the most sociable? Could a street which is highly occupied with only a particular type of static activity (e.g. N activity on New Bond Street) be considered sociable? Where would a particular type of static activity mostly exist? Section 5.1.2 noted that physical design elements were able to attract particular types of static activity, and induced the high distribution of NOR in some streets. However, this does not suggest that these particular streets are sociable.

### **5.3.1b. The distribution of N, O, R to the distribution of NOR on SE, BE, and LE**

This section analyses the above further, in terms of the strength of the relationship between the total observation of each static activity and the distribution of NOR on SE, BE, and LE in the area. This is tabulated in table 5.8.

The first row shows that the highest r-value is obtained between Necessary activity with the occupation of static activities on the Land use Element,  $r=0.967$ , followed by Building Element,  $r=0.700$ , and Street Element,  $r=0.379$ . Respectively, the corresponding regression graph in figure 5.11a shows these as  $r^2=0.935$ ,  $r^2=0.707$  and  $r^2=0.144$ . This means that 94 percent of static activities occupying Land use Element is composed of Necessary activity. There is exceptionally a high distribution of Necessary activity with the existence of land use in the studied area. With 49 percent influence of the occupation of static activities on Building Element, almost half of this distribution is observed of people performing Necessary activity. N activity also



contributes 14 percent to the occupation of static activities on Street Element. Generally, Necessary activity contributes highly to the occupation of static activities on the physical designs in the area.

Distribution of Each Type of Static Activity	Distribution of NOR on Street Element		Distribution of NOR on Building Element		Distribution of NOR on Land use Element	
	r	r <sup>2</sup>	r	r <sup>2</sup>	r	r <sup>2</sup>
Distribution of N activity	0.379	0.144	0.700	0.490	0.967	0.935
Distribution of O activity	0.581	0.337	0.077	0.006	0.059	0.003
Distribution of R activity	0.841	0.707	0.470	0.221	0.674	0.454

Table 5.8 Correlation matrix of the correlation coefficient value (r) or the strength of each type of static activity (N,O,R) with the distribution of NOR observed on each physical design element in the studied area.

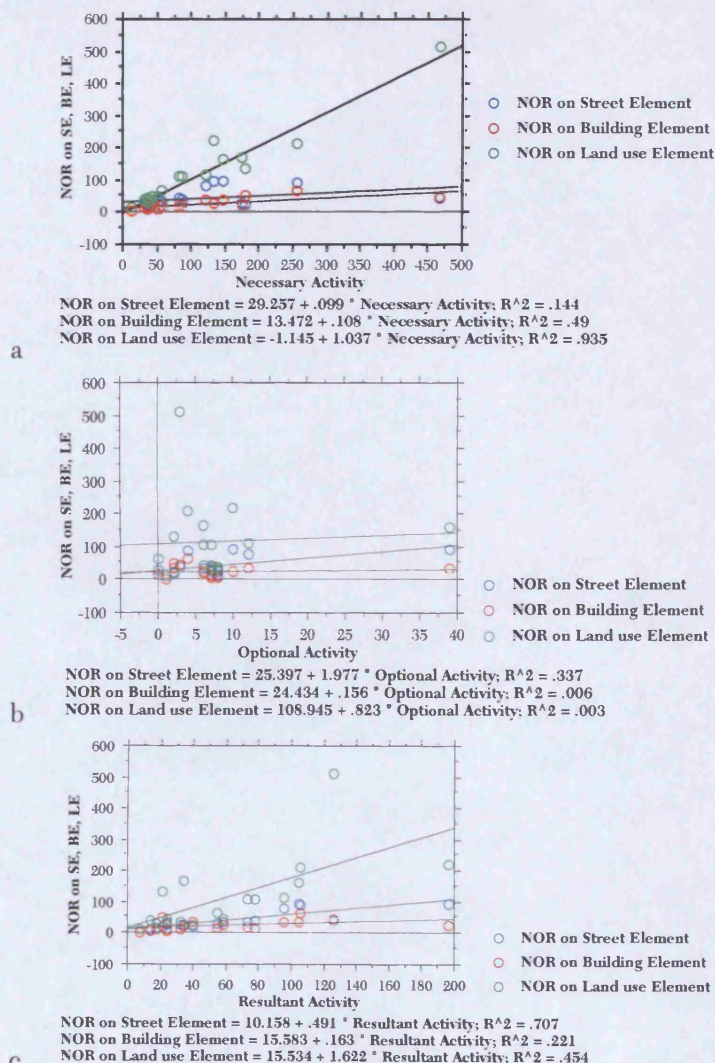


Figure 5.11. The scattergram and the regression graphs above show the strength of; a) Necessary activity, b) Optional activity, and c) Resultant activity in the occupation of static activities on Street Element, Building Element, and Land use Element in the area.

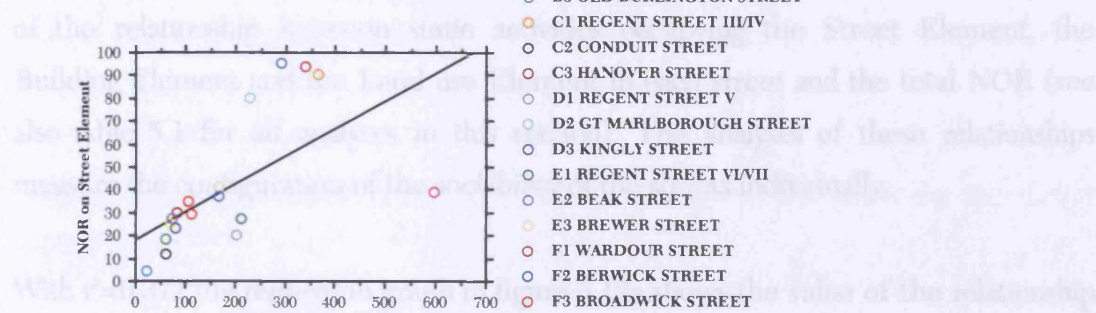
The second row shows that the distribution of Optional activity shows a strong correlation only with the occupation of static activities on Street Element, with  $r=0.581$ . It shows very poor correlations with Building Element and Land use Element. The corresponding graph in figure 5.11b shows its  $r^2$  value with Street Element as 0.337. This means that Optional activity forms 34 percent of static activities occupying the Street Element in the area. This also means that most Optional activity in the area was only significantly observed on Street Element. This may explain how the weak correlation between Optional activity and the total occupation of static activities in the area was obtained in the preceding section (see also table 5.3).

The last row shows Resultant activity strongly correlates with the distribution of static activities on all physical designs, with  $r=0.841$  on the Street Element, followed by  $r=0.674$  on the Land use Element and the Building Element,  $r=0.470$ . The corresponding regression graph in figure 5.11c shows these relationships as  $r^2=0.707$ ,  $r^2=0.454$  and  $r^2=0.221$ . This means that Resultant activity contributes 70 percent, which is a very high distribution for the occupation of static activities on the Street Element in this area. Such a high percentage strongly suggests that Resultant activity occurs together with the very existence of Street Element in streets. It also implies that the incorporation of the Street Element is essential for attracting Resultant activity in the design of streets for people. The following values show that Resultant activity contributes 45 percent to the distribution of static activities on Land use Element and 22 percent on Building Element.

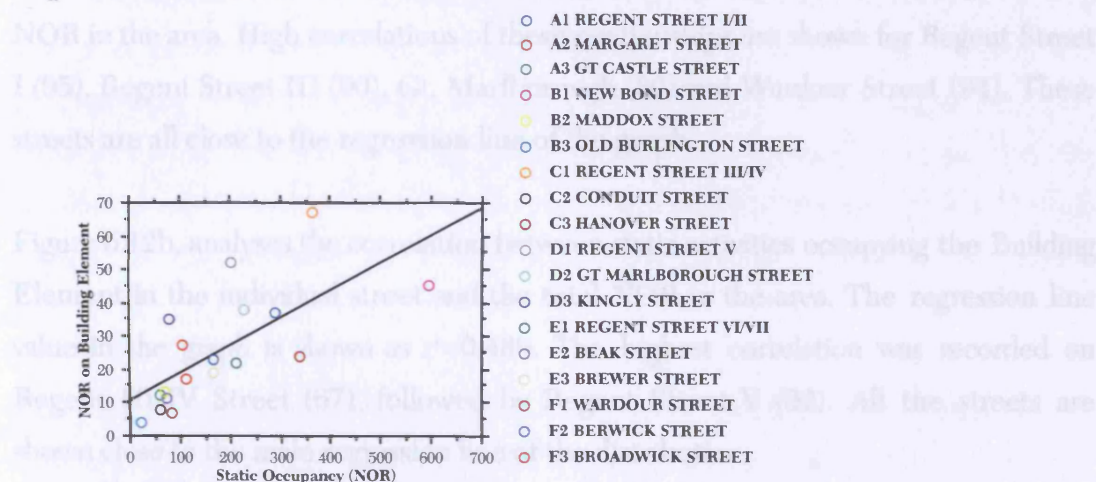
The above shows the varied concentration of each static activity on each physical design in the area. The varied strength of the relationships of these variables to one another may explain how static activities have been differently distributed in the streets in the studied area (see also section 5.1.2). A specific type of static activity sometimes manifests a strong correlation with a specific physical design element. Such a strong correlation indicates that by providing a particular design element in a street, the chances of this street being occupied by some particular static activity would arise, and could possibly induce a high distribution of static activities. This leads to the following examination of the individual street in which strong correlations were obtained between the occupation of static activities on the physical designs and the total occupation of static activities in the area.

### 5.3.1c. The relationship between the occupation of static activities on SE, BE, and LE in the individual street to the total NOR

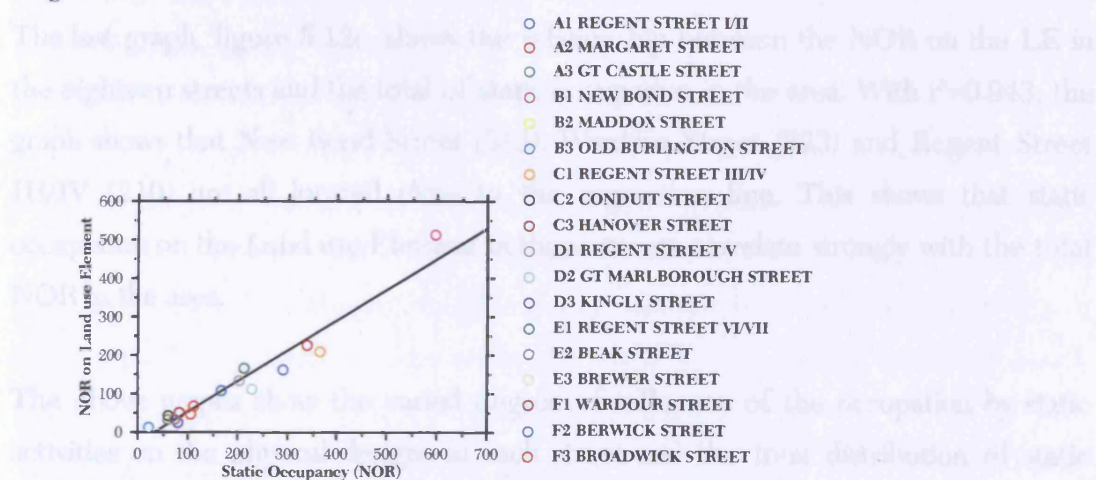
Figure 5.12 shows the relationship between the occupation of static activities in the individual street and the total NOR. The graphs in Figure 5.12a, b, and c show the relationship between the occupation of static activities in the individual street and the total NOR (see also Figure 5.1 for all graphs in the series). The regression line and the  $R^2$  value of these relationships are also shown. The regression line for the relationship between the occupation of static activities in the individual street and the total NOR is shown in Figure 5.12a. The regression line for the relationship between the occupation of static activities in the individual street and the total NOR is shown in Figure 5.12b. The regression line for the relationship between the occupation of static activities in the individual street and the total NOR is shown in Figure 5.12c.



a NOR on Street Element =  $18.356 + .121 * \text{Static Occupancy (NOR)}$ ;  $R^2 = .372$



b NOR on Building Element =  $10.648 + .083 * \text{Static Occupancy (NOR)}$ ;  $R^2 = .489$



c NOR on Land use Element =  $-29.004 + .796 * \text{Static Occupancy (NOR)}$ ;  $R^2 = .943$

Figure 5.12. A scattergram and regression graph of the distribution of NOR on: a) Street Element, b) Building Element, and c) Land use Element in the eighteen street.



Table 5.6 and figure 5.9a show the overall strengths of the relationship of static activities on each physical design elements to the total NOR in the area. However, these analyses did not examine the specific street in which the design elements were mostly occupied by static activities, and have therefore highly contributed to the total occupation of static activities in the area. The consequent scattergram and regression graphs in figures 5.12a, b, and c detail this analysis. The graphs examine the strength of the relationship between static activities occupying the Street Element, the Building Element and the Land use Element in each street and the total NOR (see also table 5.1 for all analyses in this section). The analyses of these relationships measure the configuration of the sociability of the streets individually.

With  $r^2=0.372$  the regression graph in figure 5.12a shows the value of the relationship between static activities on the Street Element in the individual street to the total NOR in the area. High correlations of these relationships are shown for Regent Street I (95), Regent Street III (90), Gt. Marlborough (80) and Wardour Street (94). These streets are all close to the regression line of the graph.

Figure 5.12b, analyses the correlation between static activities occupying the Building Element in the individual street and the total NOR in the area. The regression line value in the graph is shown as  $r^2=0.489$ . The highest correlation was recorded on Regent III/IV Street (67), followed by Regent Street V (52). All the streets are shown close to the main regression line of the distribution.

The last graph, figure 5.12c, shows the relationship between the NOR on the LE in the eighteen streets and the total of static occupation in the area. With  $r^2=0.943$ , the graph shows that New Bond Street (513), Wardour Street (223) and Regent Street III/IV (210) are all located close to the regression line. This shows that static occupation on the Land use Element in these streets correlate strongly with the total NOR in the area.

The above graphs show the varied degree of influence of the occupation by static activities on the physical designs in each street and the total distribution of static activities in the area. Some physical designs in some streets are more strongly correlated with the total NOR in the area than others. Did these strong correlations occur according to the street's hierarchy?



### **5.3.2. Configuring the Sociability of the Primary, Secondary, and Tertiary Streets**

In order to investigate the above question, section 5.3.2a analyses the correlation between the distribution of each type of static activity and the total occupation of static activities in the primary, secondary and tertiary streets in the area. Subsequently, section 5.3.2b analyses the correlation between the distribution of NOR on each physical design element and the NOR on these hierarchies of streets.

#### **5.3.2a. The Distribution of N, O, and R Activities to the NOR on the Street Hierarchy**

With  $r=0.994$  and  $0.955$ , table 5.9 shows that N activity is more strongly correlated with NOR in the secondary and tertiary streets than in primary streets,  $r=0.880$ . The corresponding regression graph in figure 5.13a shows the strength of these relationships as  $r^2=0.982$ ,  $r^2=0.912$  and  $r^2=0.785$ . This generally means that the distribution of Necessary activity in the area contributes to the occupation of static activities in the secondary and tertiary streets considerably more than the primary streets.

The next column shows that only with the distribution of NOR in the tertiary street, with  $r=0.535$ , does the distribution of Optional activity strongly correlate. The strength of this relationship is shown in the corresponding graph, figure 5.13b, as  $r^2=0.287$ . This means that 29 percent of static occupation in the tertiary street is composed of O activity. However, the distribution of these activities correlates very poorly with the occupation of NOR in both the secondary and primary streets. The particular negative  $r$ -value with the total occupation of static activities in the primary street implies that this activity was inconsistently present there. This may explain the only exceptionally high observation of O activity, which was recorded in Regent Street I (see table 5.3). Though it is generally at a low level, O activity is somehow evenly distributed in the secondary and tertiary streets in the area.

The last column shows good correlations between Resultant activity with the distribution of static activities in all types of streets. It is especially strong with the occupation of static activities in the secondary and tertiary streets,  $r=0.979$  and,

$r=0.952$ . The corresponding regression graph shows these respective  $r^2$ -values as  $r^2=0.958$  and  $r^2=0.906$ . This activity is moderately correlated with the NOR in the primary street, with  $r=0.558$  and  $r^2=0.311$ . This means more Resultant activity exists in the observation of static activities in the secondary and tertiary streets than in the primary streets.

TYPE OF STREETS	Distribution of N activity		Distribution of O activity		Distribution of R activity	
	r	r <sup>2</sup>	r	r <sup>2</sup>	r	r <sup>2</sup>
Distribution of NOR on Primary Streets	0.880	0.785	-0.169	0.029	0.558	0.311
Distribution of NOR on Secondary Streets	0.994	0.982	0.338	0.114	0.979	0.958
Distribution of NOR on Tertiary Streets	0.955	0.912	0.535	0.287	0.952	0.906

Table 5.9. Correlation matrix between the distribution of NOR on primary, secondary and tertiary streets and the distribution of N, O and R activities in the area.

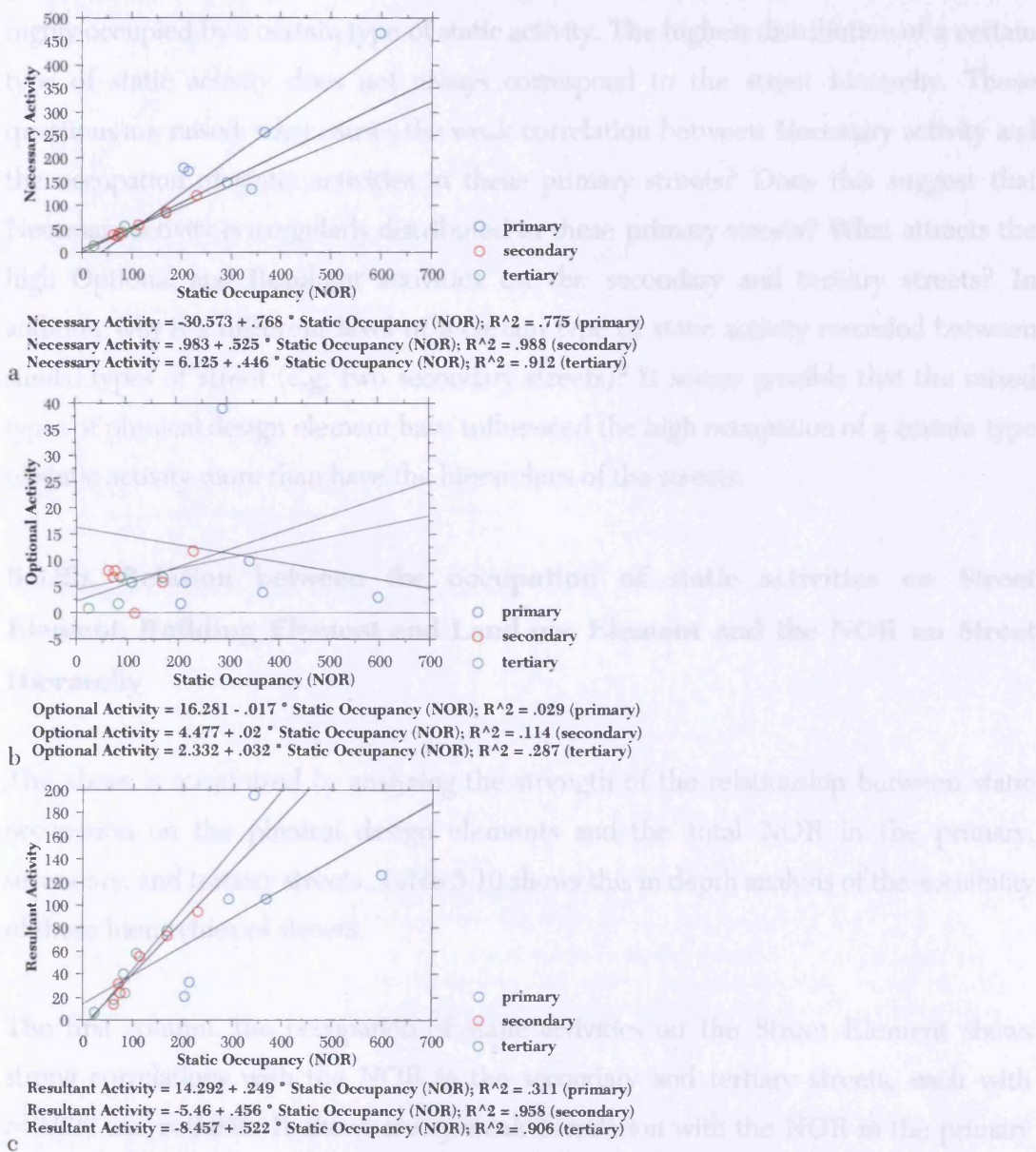


Figure 5.13 The scattergrams with the regression analyses between the distribution of N, O, and R activities and the distribution of NOR in the primary, secondary and tertiary streets.

Earlier, the highest observation of Necessary activity was recorded in the primary street (see section 5.1.1c and table 5.3), assuming that this high distribution of N activity also highly influences the observations of static activities in these streets. However, the above shows that N activity correlates more strongly to the occupation of static activities in the secondary and tertiary streets. In another example, according to the theory of space syntax (Hillier et. al, 1983), O activity occurs in order to take advantage of the high through-movement in a particular space (e.g. street). However, high O activity in the above case was not recorded in the primary street with a high through-movement of people. As is the case with R activities, they seem to be more suitably present in the secondary and tertiary streets. These findings indicate that a primary street, which normally sustains a high movement of people, is not necessarily highly occupied by a certain type of static activity. The highest distribution of a certain type of static activity does not always correspond to the street hierarchy. These questions are raised: what causes the weak correlation between Necessary activity and the occupation of static activities in these primary streets? Does this suggest that Necessary activity is irregularly distributed in these primary streets? What attracts the high Optional and Resultant activities on the secondary and tertiary streets? In addition, why is a different level of a certain type of static activity recorded between similar types of street (e.g. two secondary streets)? It seems possible that the mixed types of physical design element have influenced the high occupation of a certain type of static activity more than have the hierarchies of the streets.

### **5.3.2b. Relation between the occupation of static activities on Street Element, Building Element and Land use Element and the NOR on Street Hierarchy**

The above is scrutinized by analysing the strength of the relationship between static occupation on the physical design elements and the total NOR in the primary, secondary, and tertiary streets. Table 5.10 shows this in depth analysis of the sociability of these hierarchies of streets.

The first column, the occupation of static activities on the Street Element shows strong correlations with the NOR in the secondary and tertiary streets, each with  $r=0.930$  and  $r=0.945$ . It shows a very weak correlation with the NOR in the primary streets, with  $r=0.132$ . The corresponding regression graph in figure 5.14a of each

strength is  $r^2=0.865$ ,  $r^2=0.892$ , and  $r^2=0.017$ . The graph shows very high occupations of static activities, namely 87 and 89 percent, observed on the Street Element in these secondary and tertiary streets.

Distribution of NOR on Types of Street	Distribution of NOR on Street Element		Distribution of NOR on Building Element		Distribution of NOR on Land use Element	
	r	r <sup>2</sup>	r	r <sup>2</sup>	r	r <sup>2</sup>
Distribution of NOR on Primary	0.132	0.017	0.226	0.051	0.959	0.921
Distribution of NOR on Secondary	0.930	0.865	0.985	0.969	0.957	0.916
Distribution of NOR on Tertiary	0.945	0.892	0.433	0.188	0.931	0.866

Table 5.10 A correlation matrix between the distribution of NOR occupying the SE, BE, and LE in the streets with the distribution of NOR on the primary, secondary and tertiary streets.

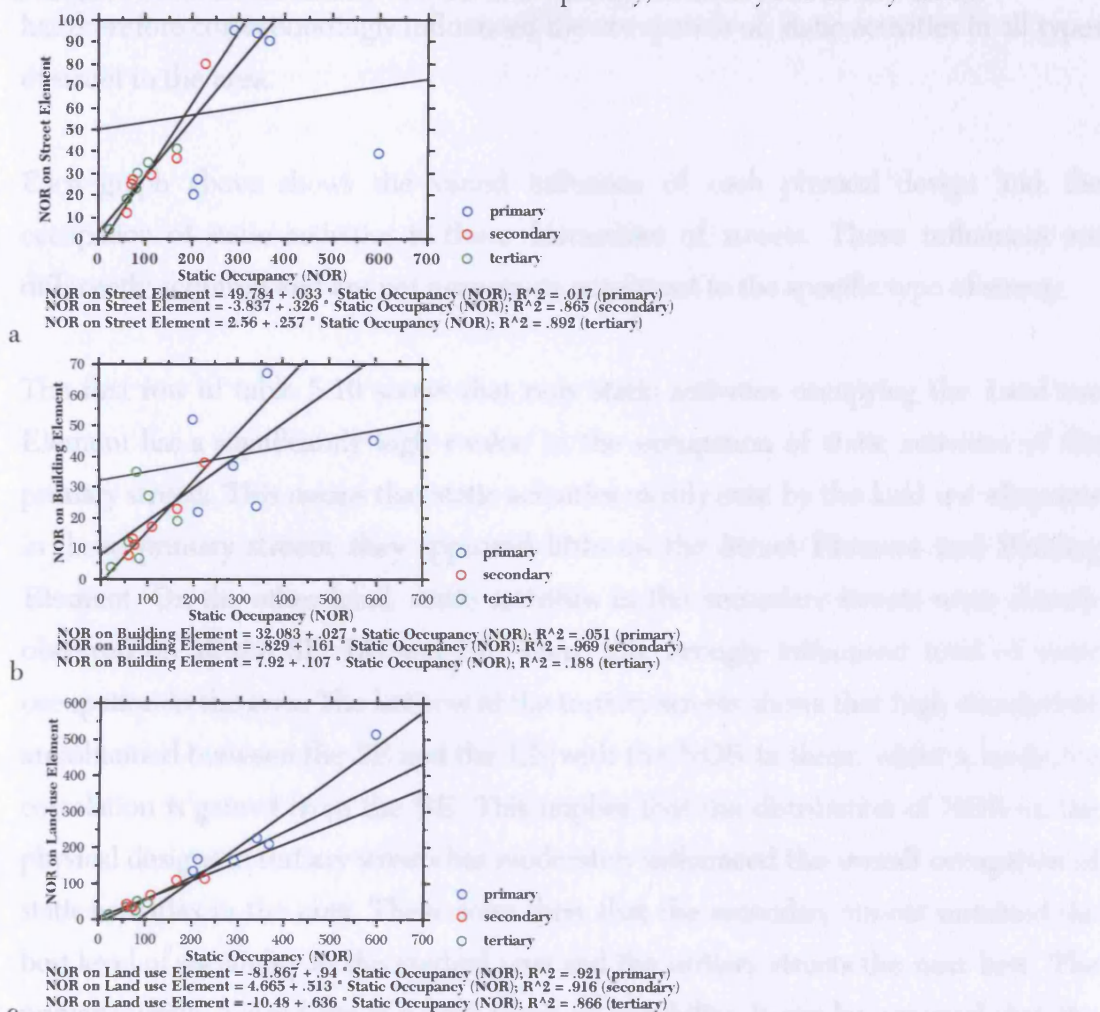


Figure 5.14 The scattergrams with the regression analyses of the strength of the distribution of NOR on the (a) Street Element, (b) Building Element, and (c) Landuse Element on the primary, secondary, and tertiary streets in the area. This demonstrates the sociability of each type of street.

The next column shows that static occupation on the Building Element has the strongest correlation with the NOR in the secondary streets, with  $r=0.985$ . A



moderate correlation is obtained in the tertiary street with  $r=0.433$ . The weakest correlation is in the primary streets, with  $r=0.226$ . The corresponding graph in figure 5.14b shows these relationships respectively as  $r^2=0.969$ ,  $r^2=0.188$  and  $r^2=0.051$ . This column shows that the NOR on the BE has greatly influenced the occupation of static activities in the secondary streets in the area.

The last column, the LE, each with  $r=0.959$ ,  $r=0.957$ , and  $r=0.931$ , correlates very strongly with the NOR in all types of street, in the primary, secondary, and tertiary. Each relationship is shown in the corresponding graph in figure 5.14c, with  $r^2=0.921$ ,  $r^2=0.916$  and  $r^2=0.866$ . This shows that the NOR on the LE is highly evident in, and has therefore correspondingly influenced the occupation of, static activities in all types of street in the area.

Each graph above shows the varied influence of each physical design and the occupation of static activities in these hierarchies of streets. These influences are differently acquired and are not necessarily consistent to the specific type of street.

The first row of table 5.10 shows that only static activities occupying the Land use Element has a significantly high  $r$ -value in the occupation of static activities of the primary streets. This means that static activities mostly exist by the land use elements in these primary streets, they appeared little on the Street Element and Building Element. On the other hand, static activities in the secondary streets were densely observed on all the SE, BE and LE. Thus, this strongly influenced total of static occupation in the area. The last row of the tertiary streets shows that high correlations are obtained between the SE and the LE with the NOR in them, whilst a moderate correlation is gained from the BE. This implies that the distribution of NOR on the physical designs in tertiary streets has moderately influenced the overall occupation of static activities in the area. These rows show that the secondary streets sustained the best level of sociability in the studied area and the tertiary streets the next best. The primary streets instead showed poor levels of sociability. It can be assumed that the overall sociability of the streets in this area is heavily generated in and influenced by the occupation of static activities on the SE, BE and LE in the secondary streets. This brings the analysis to the occupation of static activities on the detailed physical locations of the SE, BE and LE categories in these hierarchies of streets (see also table 5.1 and 5.4).

As for the detailed physical locations of the Street Element category, on the pavement-edges, a significant quantity of Optional activity, eating, drinking, and Resultant activity, chatting and watching, were observed, particularly in Great Marlborough Street (see map D) and Broadwick Street (see map F). Each street is a good example of the secondary or tertiary, vibrantly used for this type of static activity. Another good example of a tertiary street with its pavement-edges highly used for static activities is Brewer Street, where a significant quantity of Resultant activities, watching and chatting, were observed (see map E).

Though generally the pavement-edges in the primary streets were not favourably used for static activities, this was not so in the northern part of Regent Street I/II. The pavement-edges, especially in front of Westminster University, on this street were observed to have significant quantities of people eating and drinking (see map A). Wardour Street is another good example of a primary street in which the pavement-edges were actively used for static activities, people watching and chatting (see map F).

The Building Element in the secondary streets was highly occupied by static activities. This might be due to the high concentration of people smoking and watching at the entrances of shops and office frontages. Possibly, the intense use of the entrances for these activities explains the reason for the strong correlations which occurred between the Resultant activity and the occupation of static activities in these secondary streets. These were especially observed in Gt. Marlborough Street (see map D). This is one outstanding example of a secondary street which was intensely occupied by static activities. However, these (aspects of) static activities did not actively use the entrances of the primary streets. Perhaps some particular types of static activities on such types of physical designs are more suitably established in the design of a secondary street rather than a primary street.

Lastly, the occupation of static activities on the Land use Element correlated strongly with the NOR of the entire primary, secondary, and tertiary streets. It could be anticipated that dense static activities would be densely observed on the LE in primary streets, the through-streets, because of the presence of important shops. One of the specific physical locations of this Land use Element category, on which a common type of static activity was highly observed, was Necessary activity, such as

browsing and waiting at shop window-displays. These activities were especially observed at window-displays in various parts of Regent Street (see map C and map D) and New Bond Street (see map B). In another primary street, Wardour Street, a high distribution of both Necessary activity, such as browsing and Resultant activity, such as watching and chatting at eating-places, showed up. This street was particularly able to sustain an interesting combination of the different types of Necessary activity at one particular location of this Land use Element category (see map F).

In secondary streets, like Berwick Street (see map F), Necessary activities, such as browsing and waiting at window-displays, and Resultant activity, such as chatting and watching at the newsagents, were recorded. This demonstrates how the particular Necessary activity, as in the above primary streets, could also exist at different physical locations of the Land use Element category in the secondary streets.

Though tertiary streets normally sustain a low distribution of pedestrian movement (Elkington, et. al 1976, Penn et. al 1991), this section has found that they could in reality have the capacity for a high distribution of static activities. This might be possible because these tertiary streets were found to have a particular physical location of this Land use Element category, which can attract a particular type of static activity. This was the case as people were constantly observed eating, browsing, and chatting at eating-places in the tertiary streets in the area. Such a detailed location of this Land use Element category should therefore be incorporated into the design of tertiary streets for people.

Some particular types of physical design have been highly used for some types of static activity on specific types of streets. These have made the particular streets more sociable than others. Within the context of design, it could be argued that people are more likely to sit or stand at one physical design element because they find it more aesthetically pleasing. This has been revealed through many examples of good and bad physical designs, such as those of street benches (Haas Klau 1999, Streets Ahead 1980, Whyte 1980, Gehl 1975, Kostof 1992). However, this is not particularly the case in the above analyses.

The above raises these questions: Why are some physical designs more highly occupied by static activities in a certain type of street than in another type of street? Is

this (particular) type of street also accessible to static activities in the network of the streets around the studied area? These questions suggest that the analysis of the distribution of NOR in the particular type of street should not only be limited to its individual local distribution, but should be expanded to its distribution in the other network of streets in the area. The questions imply the need for an investigation of the other physical factors which might have caused the different intensity of occupation of static activities on the physical design element.

#### **5.4. CONFIGURING THE ACCESSIBILITY OF STREETS**

The above leads to an analysis of the local distribution of static activities in the dynamic movement of people within the area. This means that the relationship between the spatial aspects of static activities and their occupation within the local network of streets in the studied area would need to be understood.

In the process of analysing the accessibility of the streets for static activities, these questions are raised: would the secondary streets, which were found to be the most sociable, also be the most accessible to static activities? What is the relationship between the distribution of static activities on the Street Element, the Building Element and the Land use Element and the local spatial connectivity of the individual streets in the area? This section deals with these questions. It analyses the correlation and regression values of the socio-physical variables, the SE, BE, and LE, and the syntactic(al) variables, the  $r_3$  of the local integration value, which represents the dynamic aspect of the movement of people in the local network of streets in the area (see table 5.1.). It examines the relationship between the occupation of static activities on the physical designs and the spatial connectivity of the streets. This relationship configures the accessibility of the streets to accommodate and distribute static activities in the studied area. Section 5.4.1 calculates the accessibility level of the individual streets, and section 5.4.2 the accessibility level of the street hierarchies.

##### **5.4.1. Configuring the Accessibility of the Individual Streets**

###### **a. The relation between the Occupation of Static Activities on the Street Element, Building Element, and Land use Element and the Local Spatial Connectivity of the Individual Streets**



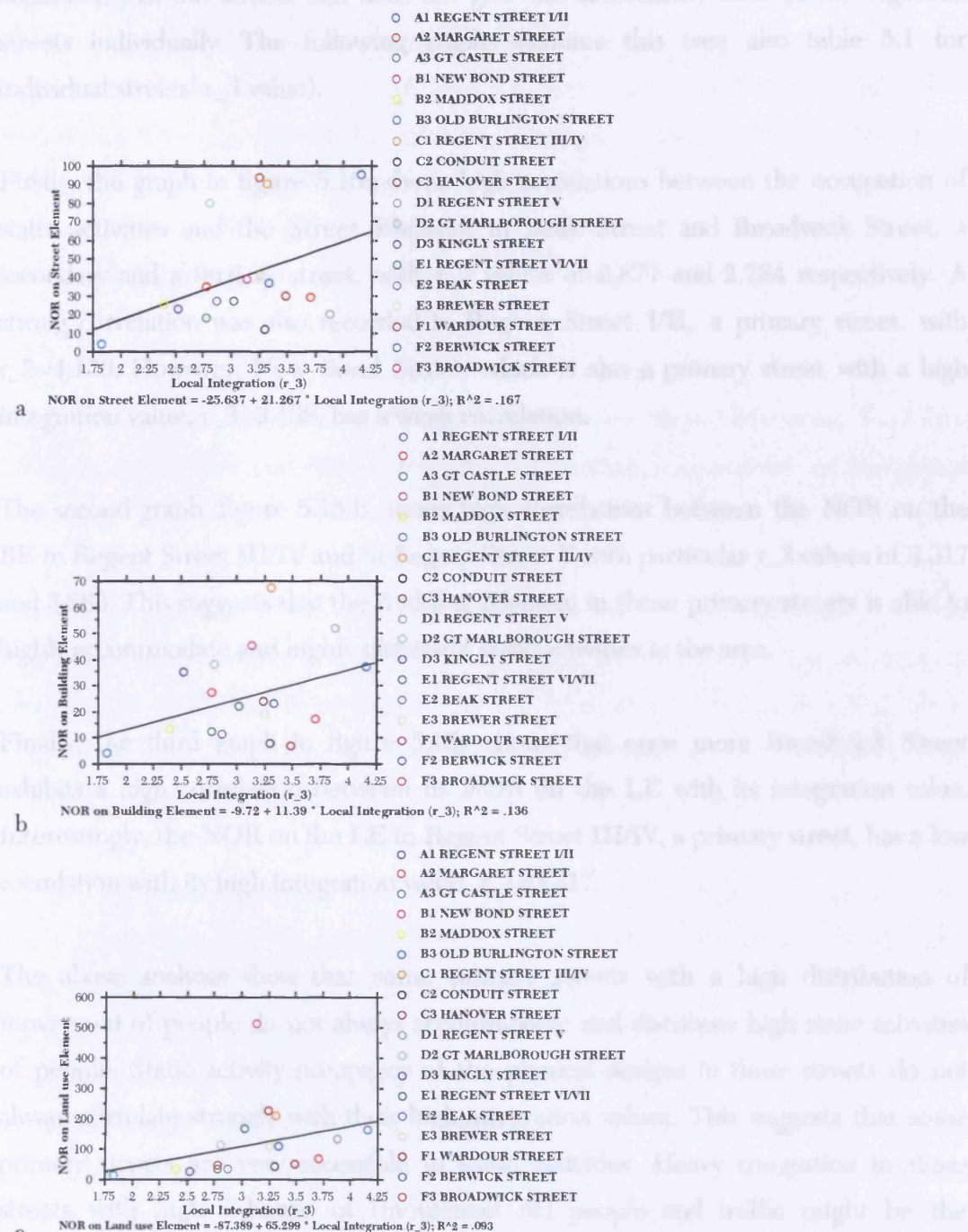


Figure 5.15 The relationship between the distribution of NOR on: a) SE, b) BE, and c) LE) to the integration value ( $r_3$ ) of the individual streets.

The 14% influence of the  $r_3$  value shows a moderate correlation between the local spatial connectivity of the streets and the total occupation of static activities in the area (figure 5.8 in section 5.1.3). The matrix in table 5.6 and the graph in figure 5.9b further detail this analysis by correlating the static activities occupancy on the Street Element, the Building Element and Land use Element and the local spatial connectivity of all eighteen streets in the area. However, it only shows the overall

accessibility of the streets and does not give the accessibility level of the eighteen streets individually. The following graphs examine this (see also table 5.1 for individual streets'  $r_3$  value).

Firstly, the graph in figure 5.15a shows high correlations between the occupation of static activities and the Street Element in Beak Street and Broadwick Street, a secondary and a tertiary street, with  $r_3$  values of 2.877 and 2.784 respectively. A strong correlation was also recorded in Regent Street I/II, a primary street, with  $r_3=4.159$ . However, New Bond Street, which is also a primary street with a high integration value,  $r_3=3.139$ , has a weak correlation.

The second graph, figure 5.15.b, shows high correlations between the NOR on the BE in Regent Street III/IV and in Regent Street V with particular  $r_3$  values of 3.317 and 3.883. This suggests that the Building Element in these primary streets is able to highly accommodate and highly distribute static activities in the area.

Finally, the third graph in figure 5.15c shows that once more Broadwick Street exhibits a high correlation between its NOR on the LE with its integration value. Interestingly, the NOR on the LE in Regent Street III/IV, a primary street, has a low correlation with its high integration value,  $r_3=3.317$ .

The above analyses show that some primary streets with a high distribution of movement of people do not always accommodate and distribute high static activities of people. Static activity occupancy of the physical designs in these streets do not always correlate strongly with their high integration values. This suggests that some primary streets are very accessible to static activities. Heavy congestion in these streets with high volumes of (movement of) people and traffic might be the explanation. The congestion moves people away to less crowded streets to execute static activities and causes the primary streets to remain the main linkages for distributing the movement of people (going) from one place to another, instead of encouraging or distributing static activities in the area.

The above possibilities are further investigated by asking: what the relationships are between the occupation of static activities on the physical designs and the integration value of the street hierarchies. Will the spatial connectivity of the street hierarchies

affect the level of this occupation? How does the street with its high local spatial connectivity level (the case of a primary street that normally accommodates a high movement of people) affect this level of occupation? More specifically: how accessible are these streets to static activities of people occupying the physical designs within their local and global network in the area?

#### **5.4.2. Configuring the Accessibility of Primary, Secondary, and Tertiary Streets**

##### **5.4.2a. The relation between static occupation on Street Element, Building Element, and Land use Element and local spatial connectivity of the street hierarchy**

The accessibility levels of the street hierarchies are assessed in this section (see table 5.1). The streets are split in accordance with their particular type. The relationship between the NOR on the physical designs in these streets and their  $r_3$  values is analysed, to show the degree of influence on accommodating and distributing static activities within the local and global network of the streets in the area.

The first column of table 5.11 shows that amongst all types of streets, static occupancy on the Street Element correlates most poorly with the local spatial connectivity value of the primary street,  $r=0.208$ ; negatively with the local spatial connectivity value of the secondary street,  $r=-0.224$ ; and best with the  $r_3$  of the tertiary street,  $r=0.821$ . The corresponding regression graph, figure 5.16a, shows the respective strength as  $r^2=0.043$ ,  $r^2=0.05$ , and  $r^2=0.675$ . It implies that the accommodation and distribution of static activities on the Street Element in the tertiary streets are well integrated with the distribution of the movement of people locally. Though the distribution acquires a negative correlation with the  $r_3$  of the secondary street, the value is as great as that of the positive correlation displayed in the primary street. Most secondary streets show a mediate integration value as presumably they have a medium level of movement. However, some of the moderate  $r_3$  values of secondary streets have shown lower correlations of low integration values with static occupation on the Street Element in them than the tertiary streets. Possibly, the acquired negative correlation in these secondary streets implies that the higher the distribution of movement, the lower the occupation of static activities on their street elements.

r_3 of the Type of Street	Distribution of NOR on Street Element		Distribution of NOR on Building Element		Distribution of NOR on Landuse Element	
	r	r <sup>2</sup>	r	r <sup>2</sup>	r	r <sup>2</sup>
r_3 of Primary Street	0.208	0.043	0.229	0.053	-0.463	0.215
r_3 of Secondary Street	-0.224	0.05	-0.087	0.008	0.248	0.061
r_3 of Tertiary Street	0.821	0.675	0.047	0.002	0.691	0.477

Table 5.11. The matrix of the correlation coefficient and the coefficient determination values between the r\_3 of each type of street with the distribution of NOR on the SE, BE and LE.

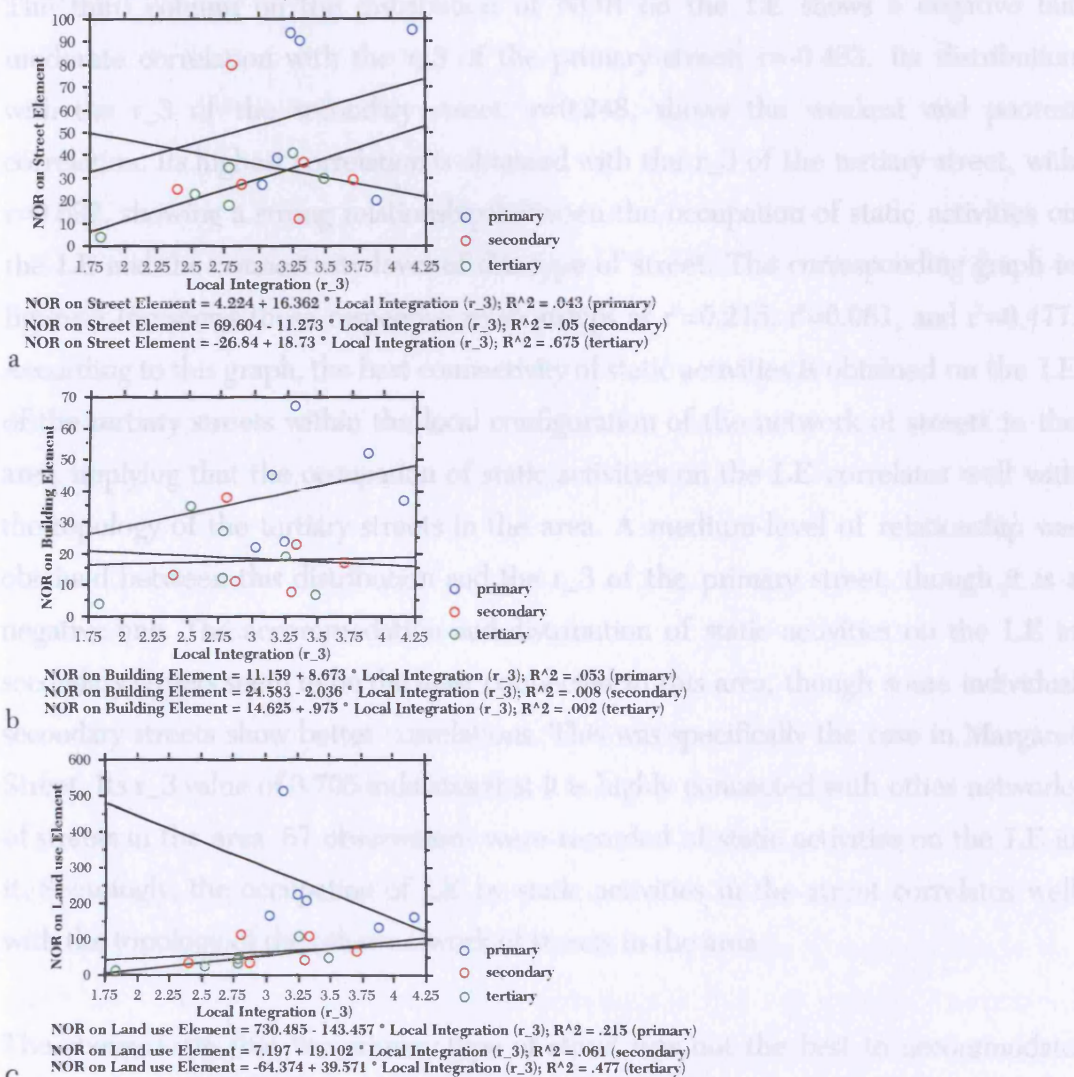


Figure 5.16. The relationship between the distribution of NOR on; a) Street Element, b) Building Element and c) Landuse Element to the r\_3 of the primary, secondary and tertiary streets in the studied area.

The second column shows that though the NOR on the BE correlates poorly with the r\_3 of the primary street, with  $r=0.229$ , it is the best amongst the other types of street. A very weak negative correlation was recorded for this distribution with the r\_3 of the secondary street,  $r=-0.087$ . It also manifest a very weak but positive correlation with the r\_3 of the tertiary street,  $r=0.047$ . The corresponding graph in figure 5.16b



shows that these relationships respectively are  $r^2=0.053$ ,  $r^2=0.008$  and  $r^2=0.002$ . Though the regression value of this distribution with the  $r_3$  of the primary street is low, it may still have influenced the accommodation and distribution of static activities in the local network of the streets in the area. As previously noted, static activities have been much observed at the entrances to buildings in the primary streets.

The third column on the distribution of NOR on the LE shows a negative but moderate correlation with the  $r_3$  of the primary street,  $r=-0.463$ . Its distribution with the  $r_3$  of the secondary street,  $r=0.248$ , shows the weakest and poorest correlation. Its highest correlation is obtained with the  $r_3$  of the tertiary street, with  $r=0.692$ , showing a strong relationship between the occupation of static activities on the LE and the connectivity level of this type of street. The corresponding graph in figure 5.16c shows these respective relationships as  $r^2=0.215$ ,  $r^2=0.061$ , and  $r^2=0.477$ . According to this graph, the best connectivity of static activities is obtained on the LE of the tertiary streets within the local configuration of the network of streets in the area, implying that the occupation of static activities on the LE correlates well with the topology of the tertiary streets in the area. A medium-level of relationship was obtained between this distribution and the  $r_3$  of the primary street, though it is a negative one. The accommodation and distribution of static activities on the LE in secondary streets seem to be the least connected in this area, though some individual secondary streets show better correlations. This was specifically the case in Margaret Street. Its  $r_3$  value of 3.705 indicates that it is highly connected with other networks of streets in the area. 67 observations were recorded of static activities on the LE in it. Seemingly, the occupation of LE by static activities in the street correlates well with the topology of the other network of streets in the area.

The above shows that the primary type of street was not the best to accommodate and distribute static activities in the local network of streets in the area. As for the secondary streets, they showed only a moderate correlation between their  $r_3$  values and the NOR on the LE in them. Though they showed the best sociability, these secondary streets are only moderate for their accessibility levels in the area. Overall, the tertiary street showed the best correlation between the static occupation on all their physical designs and their  $r_3$  values. This suggests that these tertiary streets offer the best accessibility levels in the area.

It is important to note that some negative correlation values were acquired in the primary and secondary streets. Would this suggest that the more people moving into these streets, the less the occupation of static activities? Apparently, the high distribution of people does not necessarily influence the high distribution of static activity. It is evident that the physical designs are sometimes more influential on the increased occupation of static activities than the level of spatial connectivity of the streets to other networks of streets in the area. This might explain why some secondary and tertiary streets (in the area) were highly occupied by static activities whilst some primary ones were highly occupied by people walking from place to place.

## **5.5. CONFIGURING THE SOCIABILITY AND ACCESSIBILITY OF STREETS**

The following sections highlight the process of configuring the sociability and accessibility of the streets in the studied area.

### **5.5.1. Strengths of the type of static activities and the local spatial connectivity of the streets in the total NOR**

The first step in configuring the sociability and accessibility of the streets is to evaluate the degree of influence of each type of static activity and the  $r_3$  value of the local spatial connectivity of the streets on the total NOR in the area. Table 5.7 first shows the strength of the relationship between each type of static activity and this total NOR. The table shows that N and R activities acquire strong relationships to the NOR, and O activity a weak one. These demonstrate that the overall occupancy of static activities in the area is less influenced by O activity and more strongly influenced by N and R activities. The earlier analysis in section 5.1.3 shows that this NOR's distribution is influenced 14% by the  $r_3$  value of the streets. These analyses raise the important question of whether there are other factors that might have influenced the accommodation and distribution of static activities in the area, which will need to be examined in relation to the availability of the physical designs in the streets.

### **5.5.2. Strengths of SE, BE, LE in the NOR (Sociability) and in the $r_3$ (Accessibility) of the individuals' streets**

The above is firstly addressed by analysing the strength of the relationship between the distribution of NOR on each physical design (SE, BE, LE) and the total NOR, and the  $r_3$  values of the streets. In that order, the configuration is measured of the sociability and accessibility of the streets in the whole area studied.

Table 5.6 reports the sociability level of all streets in the area. As compared to the Street Element and the Building Element, the static activities occupying the Land use Element has shown the strongest correlation with its whole occupation in the area. It means that static activities occupying the whole studied area has been highly influenced by those activities that are concentrated on the Land use Element. The occupation is then analysed separately in the individual streets and on some streets shows strong correlations with the NOR in the area (see figure 5.12c), implying that certain physical designs in certain streets are more conducive to static activities than others. It also suggests that some streets are more sociable than others.

Table 5.6 also shows the accessibility levels of all streets by correlating the distribution of NOR on all physical designs with the  $r_3$  values of the eighteen streets. Interestingly, this correlation is not as strong as it is with the total NOR in the area. With only  $r=0.409$ , the occupation of static activities on the SE has acquired the highest correlation with the  $r_3$  values of the streets. However, some individual correlations of this occupation with the  $r_3$  of the individual streets are stronger than others (see figure 5.15a,b, and c) indicating that it is not definite that the spatial distribution of the movement of people in the local network of streets would greatly contribute to the high occupancy of static activities in the individual streets. This would cause some streets to be more accessible to static activities than others.

A primary street such as Regent Street III/IV manifests a high integration value,  $r_3=3.317$ , and has recorded a high NOR with 367 observations (see table 5.1). The graphs in figure 5.12 a,b, and c and 5.15 a,b, and c show that the physical designs (in accommodating static activities) and the spatial connectivity of this street (in distributing static activities occupying the physical designs) within the local network of the streets in the area are strongly correlated to one another (see also map A). Such a good correlation between the topography and topology of the street reflect a balance of static and dynamic activities, hence its sociability and accessibility.

The case of a secondary street, Great Marlborough Street, is also highlighted. This street had  $r_3=2.805$  and 230 observations of NOR were recorded (see table 5.1, and figures 5.12 a, b, and c and 9.15 a, b, and c). Though its integration value is medium-level, this particular street recorded high distributions of N and R activities. People were observed smoking at entrances, chatting and watching on the pavement-edges. This street even recorded moderately high O activity such as eating and drinking (see maps N, O and R activity). Though there is no sign of any architectural importance, it attracted a high occupancy of static activities, implying that the physical designs have in reality influenced such activities both within its local and global networks in the area (see also map D).

Kingly Street, a tertiary street, with a low  $r_3$  value, 2.524, recorded 82 observations of NOR (see table 5.1). This makes it a low integrated (segregated) space within the area accommodative to a moderate occupancy of static activities (see also map D, figures 5.12 a, b, and c and 5.15 a, b, and c). Though its static occupancy level is below the overall average, it is above the average of all the streets of its type. It seems that only a limited movement of people into the area might influence the occupancy of static activities in this street.

From an urban design perspective, some of these streets are good examples of high levels of pedestrian activities both in the dynamic and static modes. Such a way of analysing the topography and topology of streets will be useful information to urban designers as it brings out the importance of such relationships in designing public streets for people. It emphasises the physical design elements in understanding and designing the way people's static activities accommodate and distribute themselves in streets. The 'appropriate topography' in the local spatial network of the streets seems to have an effect on the topology of static activities in the global spatial network of the streets. The topography, which is conducive to static activities can induce a high sociability level in the local spatial network as well as a high accessibility level within the global network. This could imply that the classification of primary, secondary and tertiary streets could be re-evaluated in accordance with how they are used by static activities – based on the degree of influence of the social, socio-physical and syntactic variables on the accommodation and distribution of static activities (in streets).



Hillier's (1996) theory of natural movement suggests that urban patterns or optional activities are the by-product of movement, where the rise of these densities is influenced by natural movement on the evolution of urban patterns and the distribution of land uses. However, some low correlations were shown between the local spatial connectivity of some streets and the occupation of static activities on some physical designs in them. Will it then still be valid to assume that these occupations are the 'by-product' of the global distribution of the natural movement of people in the spatial configuration of the area? Why did some physical designs occupied by static activities not correlate well with the  $r_3$  of certain streets? Could it instead be argued that designers of the 'integrated spaces' that Hillier describes do not sufficiently describe the spatial connectivity of the different types of static activities randomly located and distributed on the physical designs in these streets?

### **5.5.3. The relationship between the Sociability and Accessibility of the Primary, Secondary and Tertiary Streets**

The above is further analysed by raising two main questions: what are the relationships between the spatial connectivity of the physical designs occupied by static activities and the total NOR in the area within the local and global network of the street hierarchies? Will a high integrated space, eg a primary street with a high integration value, manifest a high occupancy of static activities on its physical designs, whilst the low integrated space of a tertiary street will show a low occupancy of static activities on its physical designs? In order to answer these questions, the sociability and accessibility of the eighteen streets are analysed according to their hierarchies.

Table 5.10 shows that in the primary streets, only static activities occupying the Land use Element manifests a high correlation with the occupation of its total static activities. This indicates that only the LE, and not the other physical design elements in these primary streets, is highly occupied by static activities. Such a high occupancy on the land use elements could be expected in the case of highly integrated spaces, as primary streets normally distribute high movement of people. However, the correlation value of this distribution has dropped significantly and even shows a negative correlation with the  $r_3$  of these primary streets (see table 5.11). This could imply that a high distribution of people moving into these primary streets would create congestion or crowds. Therefore, people executing static activities avoid this

street. It could also imply that the level of local distribution of static activities on the LE in these primary streets is neither consistently nor equally distributed. This is proven when static activities occupy some primary streets more heavily than others. One outstanding case is New Bond Street, a primary street that records a significantly high N activity, but only at its window displays (see table 5.1, map B and map N activity). It suggests that the type of physical design elements existing on this particular street is restricted, even of one type only: therefore, this only allows one particular type of static activity to take place.

Amongst all types, the distribution of NOR on all three physical designs on the secondary street manifests the highest correlation with its occupancy of static activities (see table 5.10), indicating that these secondary streets acquire high sociability levels. However, the correlation values between these distributions and the  $r_3$  of the secondary streets is weak, with a positive correlation on the Land use Element and a negative one on the Street Element (see table 5.11). This demonstrates that though these secondary streets are sociable, they are not very accessible to static activities.

This might be the case because though secondary streets manifest medium-level integration values, some of the physical designs on them have been more intensely used than on other secondary streets. This has incurred an imbalanced occupation of the physical design elements by static activities. As the outstanding example (mentioned in the earlier section), Great Marlborough Street was observed as having a high distribution of people sitting, standing, and smoking at building entrances (see map BE), and chatting and watching along the pavement-edges (see map SE). This might explain how a somewhat quiet (moderately segregated) street, rather removed from the major flow of people in the area, could be effectively used for static activities.

Lastly, the occupation of static activities on the Street Element and on the Building Element shows high correlations, with the static activities occupying the tertiary streets in the studied area (see table 5.10). Interestingly, when this distribution is correlated with the local spatial connectivity of these streets, high correlations are shown with distribution on the SE and LE (see table 5.11). This indicates that these tertiary streets are relatively highly sociable as well as accessible to static activities.

Though topologically tertiary streets reveal low integration values (as they are segregated in accordance with the 'natural movement theory'), the local and global distributions of static activities on all the physical design elements in these streets are consistent. This is particularly evident in table 5.9, which shows that of all types of static activities (N, O, R), only the correlation between the Optional activity in the tertiary street shows a strong correlation with the total occupation of static activities in the area. People were observed eating in these streets, not just at the Land use Element (by the outdoor cafes) but also standing 'to watch', chatting, and engaging in conversation with one another (see maps N, O, and R activity).

It makes sense to observe low static occupancies in the segregated tertiary streets, as in the case of the observation on Old Burlington Street (see map B). This street acquires a low level of spatial topology as well as weak correlations in all types of static activities with all types of physical designs on it. However, some tertiary streets are found with high static occupancy, as is the case with Kingly Street. This could mean that the sociability and accessibility of the tertiary streets are well integrated with one another, locally as well as globally. Inherently, this means that static activities are also well distributed locally as well as globally. This particular analysis of the tertiary streets in this area strengthens the argument that the physical designs, which form the important topography in the street, should manifest a strong correlation with the spatial connectivity of the street in order to enhance its uses for people.

This section has shown the importance of incorporating the interplay of the social, socio-physical, and spatial variables for configuring the sociability and accessibility of streets. It has claimed that some physical designs rather than others are better occupied by static activities on particular streets. The different occupations of static activities on these physical designs cause the different sociability and accessibility levels in the particular street. Further evidence is that better correlations are manifest between the distribution of NOR on the physical designs with the  $r_3$  of the tertiary streets than of the primary streets. This is even more interesting when some negative correlations are shown between these distributions and the  $r_3$  values of the primary and secondary streets are considered. Clearly, this shows that a tertiary street with a low-integrated value can accommodate a high occupancy of static activities and a primary street with a high-integrated value can in contrast accommodate a low occupancy of static activities. This leads to the final analysis.

## SECTION THREE – COMPARING THE PROPORTION OF SOCIABLE AND ACCESSIBLE STREETS

### 5.6. BALANCING THE SOCIABILITY AND ACCESSIBILITY OF STREETS

This section applies a chi-square analysis, which examines the relation between the sociability levels of the hierarchies of the streets and their accessibility levels. It evaluates the statistically significant differences between the spatial connectivity level of the streets with the total distribution of static activities in the studied area (see also figure 4.4 in chapter 4). It examines the relevant proportion of the primary, secondary, and tertiary streets to the total of static occupation in the studied area for balancing the static and dynamic activities of people. Such an examination aims to achieve an efficient flow of pedestrian movement and an efficient use of the streets for static pedestrian activities.

#### 5.6.1. Chi-square Analysis between the Sociability and Accessibility of Streets

Type of Street	NOR			r_3		
	S.E	B.E	L.E	S.E	B.E	L.E
Primary	0.017	0.051	0.921	0.043	0.053	0.215
Secondary	0.865	0.969	0.916	0.05	0.008	0.061
Tertiary	0.892	0.188	0.866	0.675	0.002	0.477
	SOCIABILITY			ACCESSIBILITY		

Table 5.12. This table shows the  $r^2$  values, which represent the levels of influence between the distribution of NOR on the SEBELE and the total of NOR and the  $r_3$  of the primary, secondary and tertiary streets. Respectively, these show the sociability and accessibility levels of these hierarchies of streets.

In order to achieve a balance of the use of the streets in the studied area for static and dynamic activities of people, their imbalanced proportion (60% and 40%) of static activities needs to be investigated (see section 5.1.1). Though some streets recorded above average for the total occupation of static activities in the area, these streets are not necessarily sociable. This makes it necessary to compare the sociability levels of these streets against their accessibility levels.

The above was also noted in relation to the 14% of the distribution of the movement of people, which affected the distribution of static activities within the local networks of streets in the area (section 5.1.3 and figure 5.8), leading to an investigation of the

street type (either primary, secondary or tertiary), which mostly influences the total occupation of static activities in the area. This is because, relative to the  $r_3$  value of the street obtained according to space syntax analysis, the type of street with a high integration value is also considered highly accessible for pedestrian movement.

As highlighted earlier, a primary street has a high integration value and is therefore highly accessible, followed by secondary and tertiary streets. Table 5.12 shows the sociability levels of these hierarchies of streets against their accessibility levels. The secondary street acquires the highest sociability in the area, followed by the tertiary and the primary. On their accessibility level, the tertiary street in contrast acquires the highest accessibility for static activities, followed by the primary and the secondary.

How many of these types of streets have acquired high sociability levels? This is shown in table 5.13, which places each street according to its hierarchy with its level of sociability (either in the high or low column) and shows that three primary, six secondary and five tertiary streets are highly sociable.

	SE	BE	LE	High Sociability	Low Sociability
	$\geq 0.5$	$\geq 0.5$	$\geq 0.5$		
Regent Street I/II	-	x	x	x	
New Bond Street	-	-	x		x
Regent Street III/IV	-	-	x		x
Regent Street V	-	-	x		x
Regent Street VI/VII	x	x	x	x	
Wardour Street	x	x	x	x	
<b>Total Primary Street</b>				3	3
Margaret Street	x	x	x	x	
Maddox Street	x	x	x	x	
Conduit Street	x	x	x	x	
Gt. Marlborough Street	x	x	x	x	
Beak Street	x	x	x	x	
Berwick Street	x	x	x	x	
<b>Total Secondary Street</b>				6	0
Great Castle Street	x	x	x	x	
Old Burlington Street	-	-	x		x
Hanover Street	x	x	x	x	
Kingly Street	x	x	x	x	
Brewer Street	x	x	x	x	
Broadwick Street	x	x	x	x	
<b>Total Tertiary Street</b>				5	1

Table 5.13. The frequency of the primary, secondary, and tertiary street with high and low sociability levels.

The key question following the above results is how both the sociability and accessibility levels (as in table 5.12) of these streets can be adjusted to achieving  $r^2=0.5$  (50%) each, giving an equal distribution of static and dynamic activities of people. This is in order to have a balanced proportion of primary and secondary streets

with high and moderate integrated values and tertiary streets with low integrated value for static activities. This is a 'null hypothesis', where it is assumed where there is no statistical difference between the sociability levels of these streets and their hierarchies, which were determined in their levels of integration.

The null hypothesis is a prediction that there is no relationship between the independent ( $r_3$  of the street) and the dependent (sociability of the street) variables (Hinton 1999). This means that, if there were no statistically significant difference between the accessibility of the streets and their inherent integration values in accommodating static activities, it is simply assumed that half the streets will be highly used for static activities - irrespective of their hierarchies – and half will be highly used for dynamic activities. Is there any statistically significant difference between the distribution of static activities and the integration value of the street hierarchies? What is the statistical significance of the proportion of highly accessible streets against those which are highly sociable?

In analysing the above, a chi-square ( $\chi^2$ ) analysis is applied in order to compare the proportion of street hierarchies with their level of sociability. It analyses the frequency of the primary, secondary, and tertiary streets, which are highly sociable. The primary and secondary streets form the highly and medium integrated streets. The tertiary street is separately categorised as the segregated-street. It particularly counts the quantity of highly-integrated streets that can be associated with high static activities.

	Sociability Level		
	High Sociability	Low Sociability	TOTAL
High and medium- integrated streets	O:9	O:3	12
Low-integrated streets	O:5	O:1	6
TOTAL	O:14, E:9	O:4, E:9	18

Figure 5.14. Table of observed and expected frequencies of primary, secondary, and tertiary streets that manifest high and low sociability.

In order to test the significant difference between the frequency counts of the hierarchies of the streets above, their chi-square value will need to be calculated. It is first assumed that half of the streets are sociable and half accessible. This means that the proportion of streets in the studied area is 50% sociable and 50% accessible and out of eighteen streets, nine would be 'expected' to be sociable instead of the

‘observed’ fourteen as in table 5.14. Five out of six low-integrated streets were ‘observed’ to be highly sociable, comprising 80%. The  $\chi^2$  value of these frequency counts is calculated as follows,

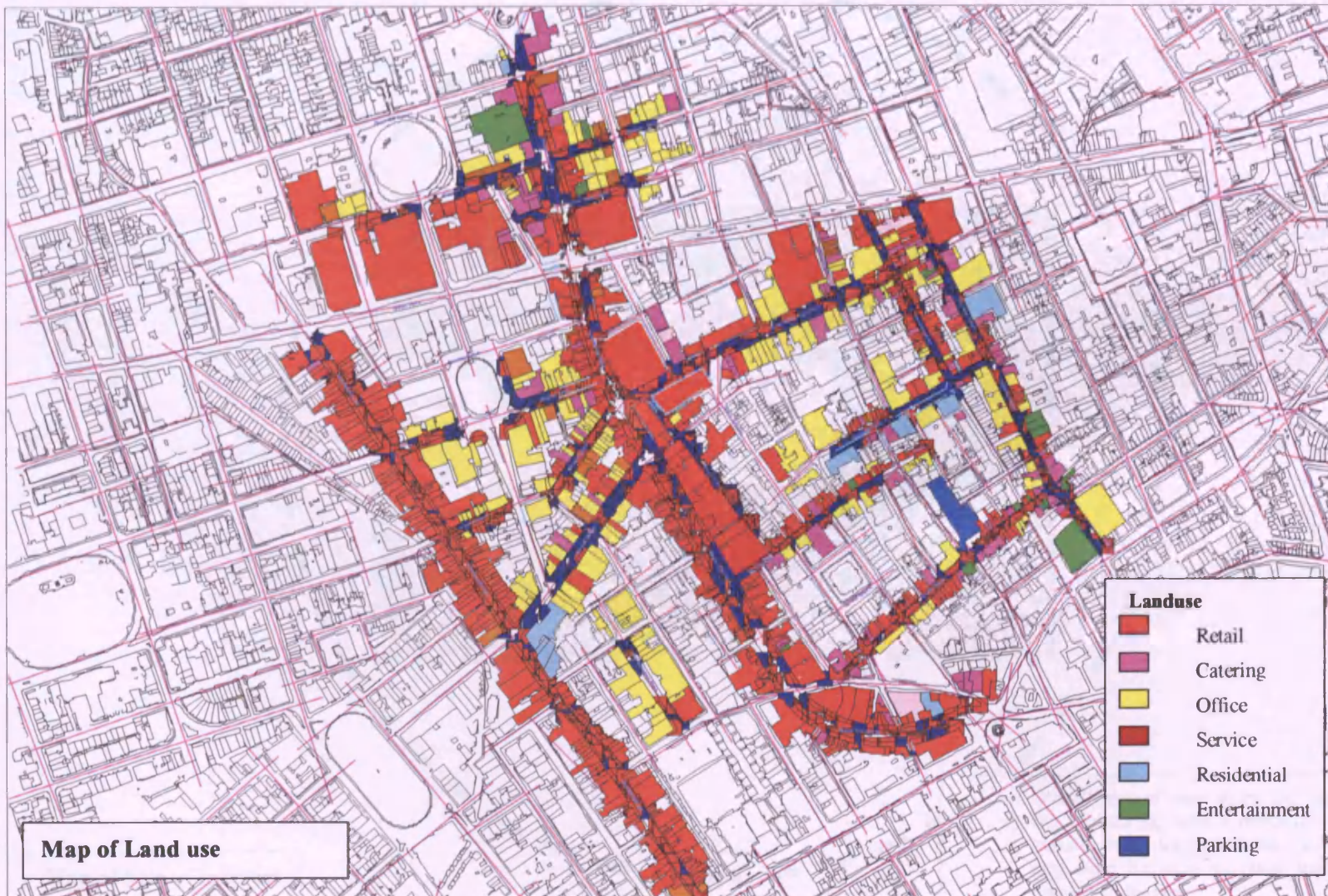
$$\chi^2 = \sum \frac{(O - E)^2}{E} + \frac{(O - E)^2}{E} = 5.54$$

The  $\chi^2$  value of the statistical difference of the streets above is compared to the  $\chi^2$  table in the appendix. From Table  $\chi^2$  distribution in the Appendix,  $\chi^2 = 3.84$ ,  $df=1$ ,  $p=0.05$ . As the calculated value of  $\chi^2$  is greater than the table value, the null hypothesis can be rejected. There is a significant difference ( $p<0.05$ ) between the observed and expected frequencies: the sociability levels of the streets are not equally distributed. There is a significant difference between the proportion of high-integrated and low-integrated streets that are highly sociable and poorly sociable, and the possibility that 1 in every 20 could be at random. In other words, there is less than one chance in twenty cases studied that the differences between the low integrated and high-integrated streets manifesting high sociability could have arisen by chance (Hinton 1999, Rowntree 1981).

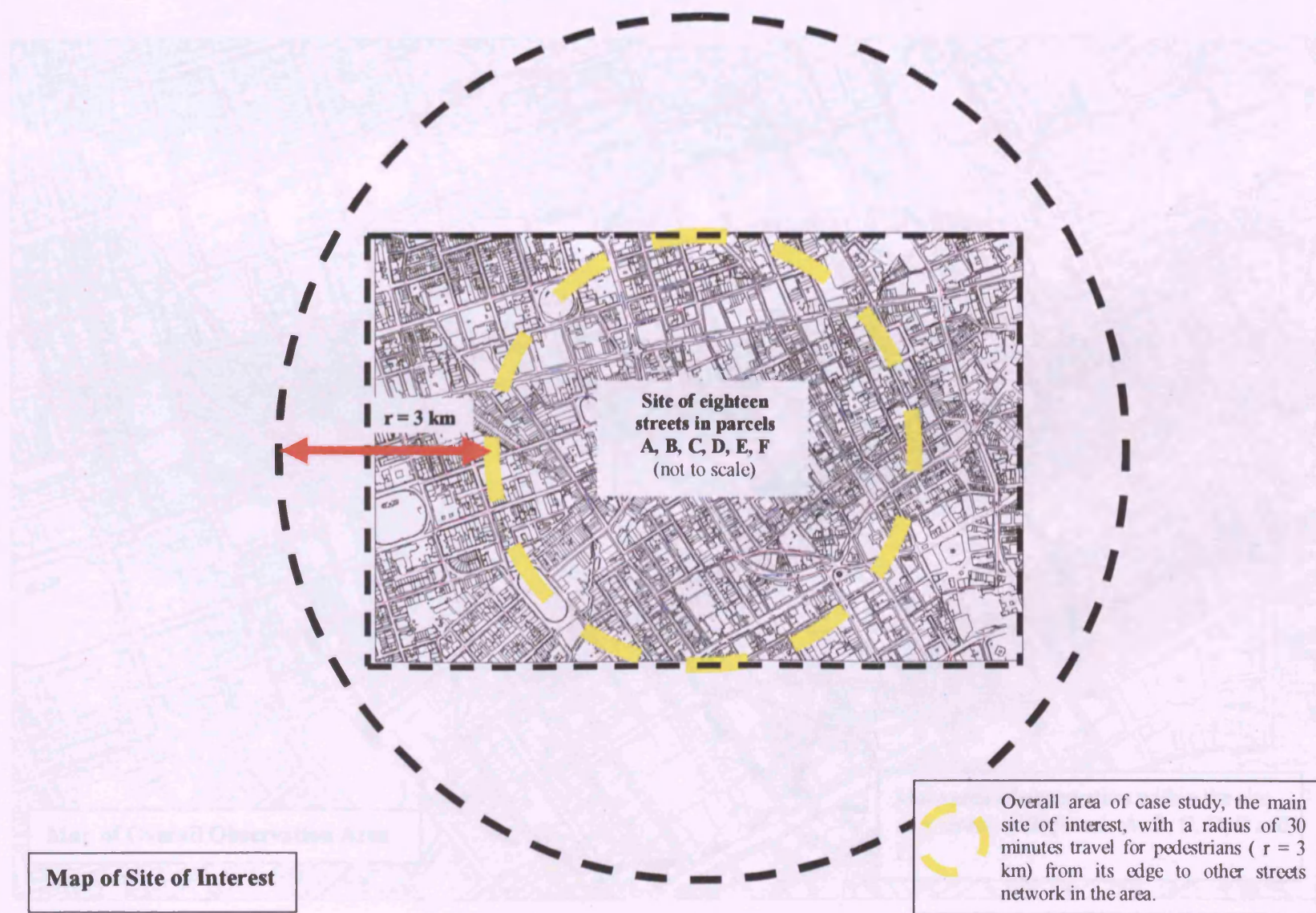
This implies that the spatial configuration of an area does not necessarily have a significant impact on the distribution of static activities in streets. This may cause the high local configuration of the street not to contribute to the high distribution of static activities. A balance between high-integrated streets that are highly accessible and those that are highly sociable should be considered in designing streets for people.

## **Part II – Maps of Snap Shots**

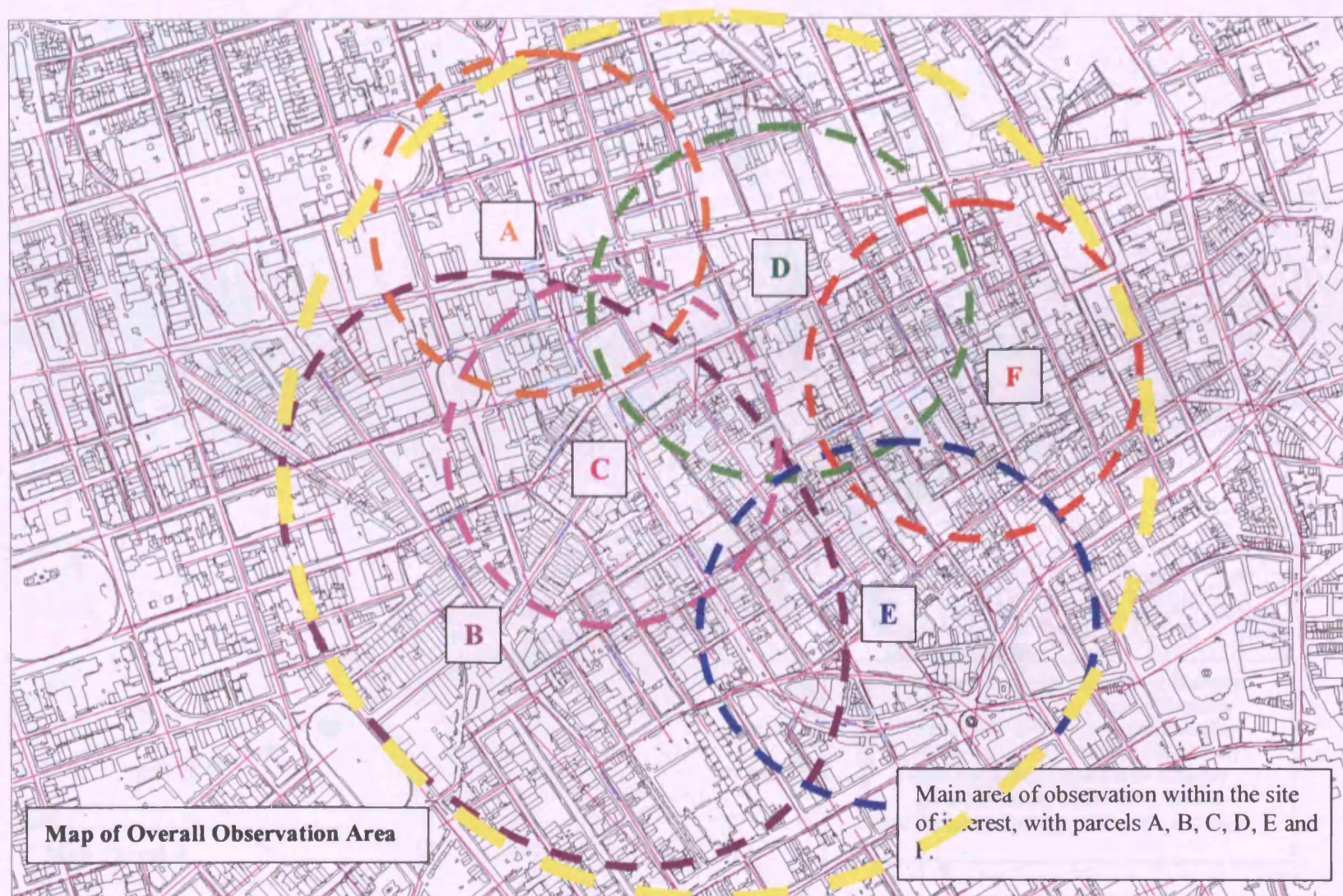




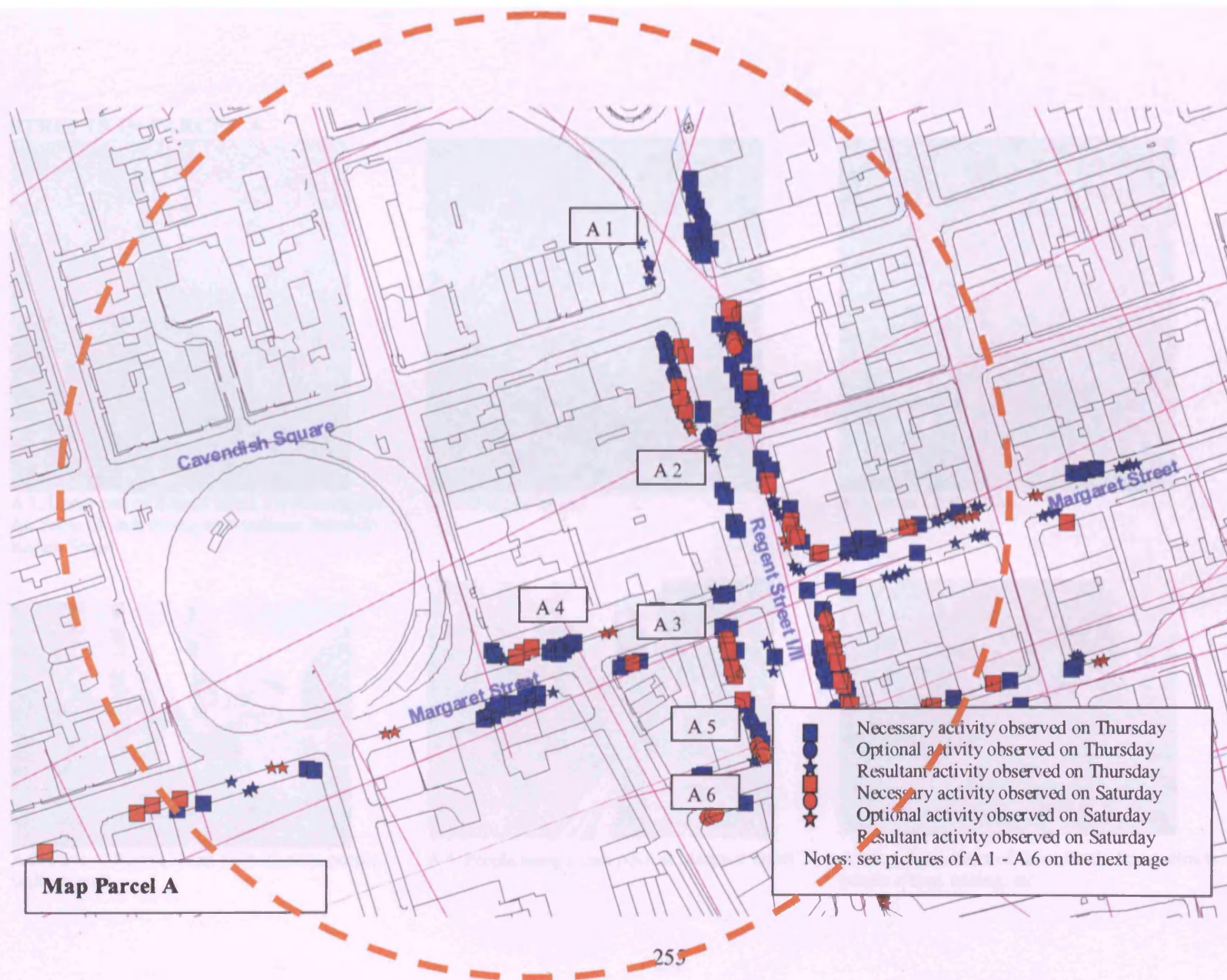














## STREETS IN PARCEL A



A 1. Upper part of Regent Street I/II showing the All Souls Church stating its prominent feature in Regent Street



A.3. Margaret Street



A 5. Great Castle Street



A 2. Parts of Regent Street I/II with most people walking on it

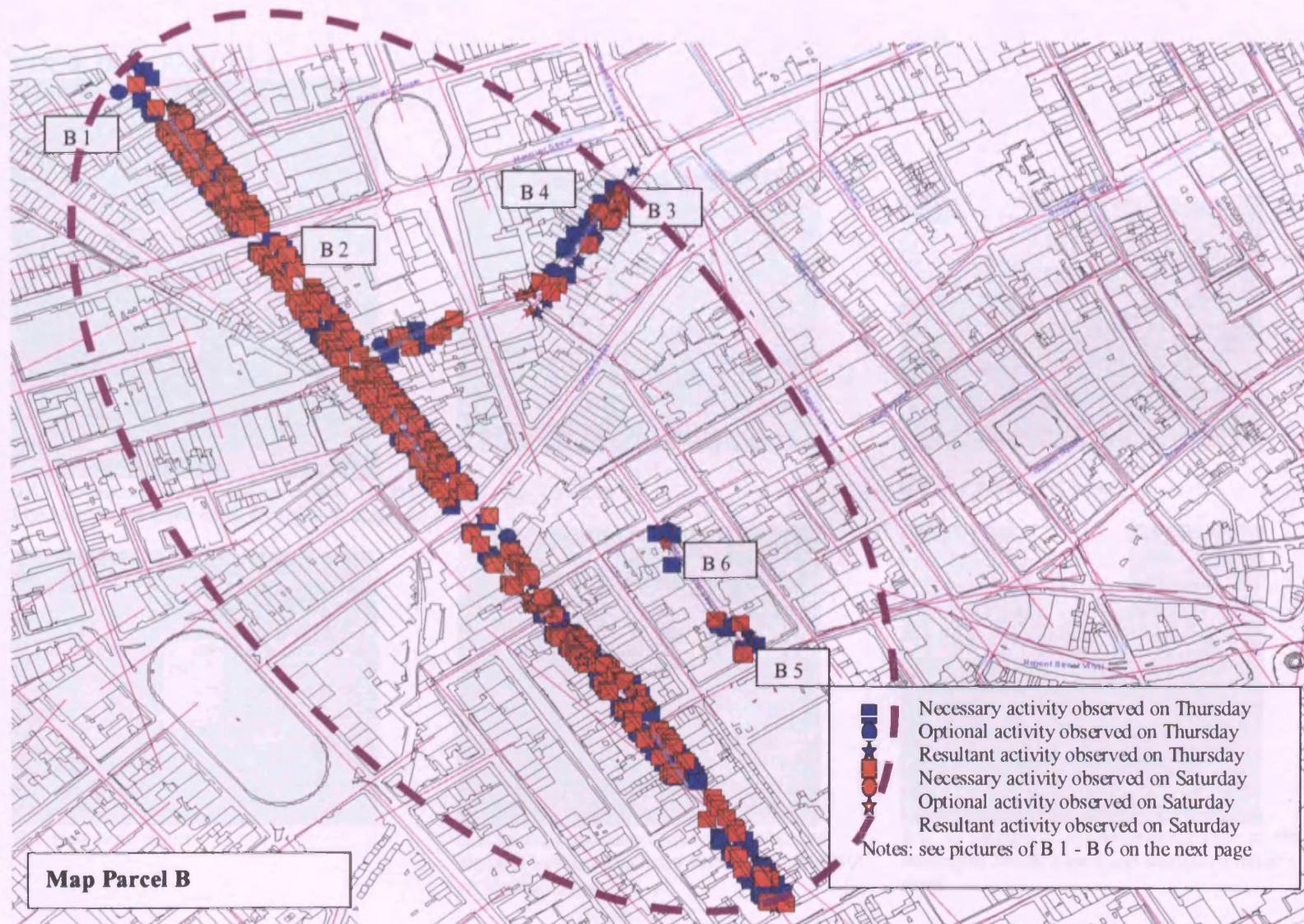


A 4. People using a cash point at Margaret Street



A 6. A café at corner of Great Castle Street attracts people sitting, talking, etc.







## STREETS IN PARCEL B



B 1. The extravagance of window display on New Bond Street, not much static activities spotted here



B 3. Maddox Street



B 5. Old Burlington Street



B 2. New Bond Street

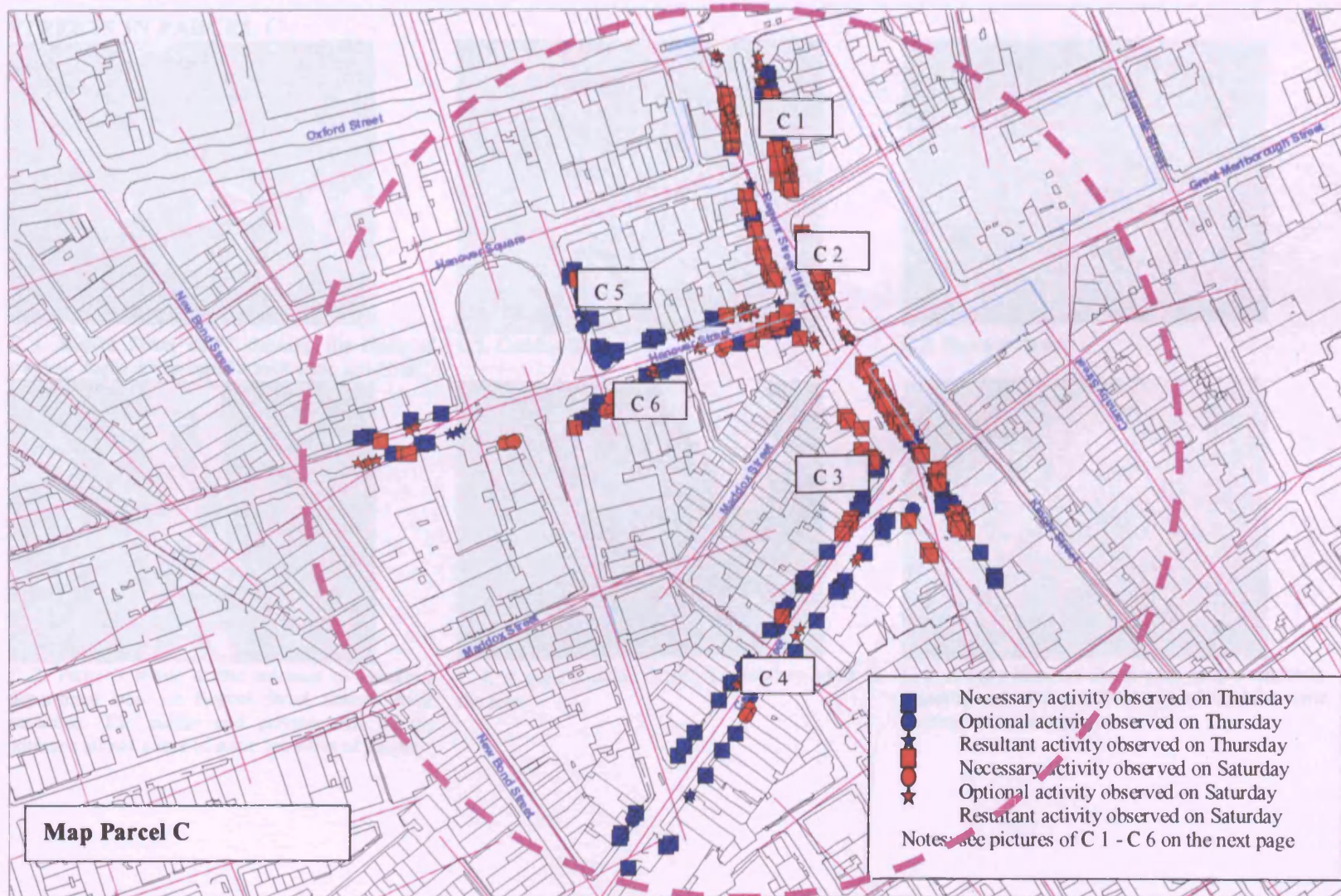


B 4. Moderate window display an example of physical location which can attract static activities on Maddox Street



B 6. An example of an uninteresting scene on old Burlington Street, a quiet and segregated tertiary street







## STREETS IN PARCEL C



C 1. Regent Street III/IV showing the kinds of window displays that could attract static activities



C 2. People's statue at the entrance of Hamley's department store on Regent Street attracts static activities. The public and private area of the entrance allows a mix of static activities of people



C 3. Conduit Street



C 4. A quiet Conduit Street, a secondary street in the area.

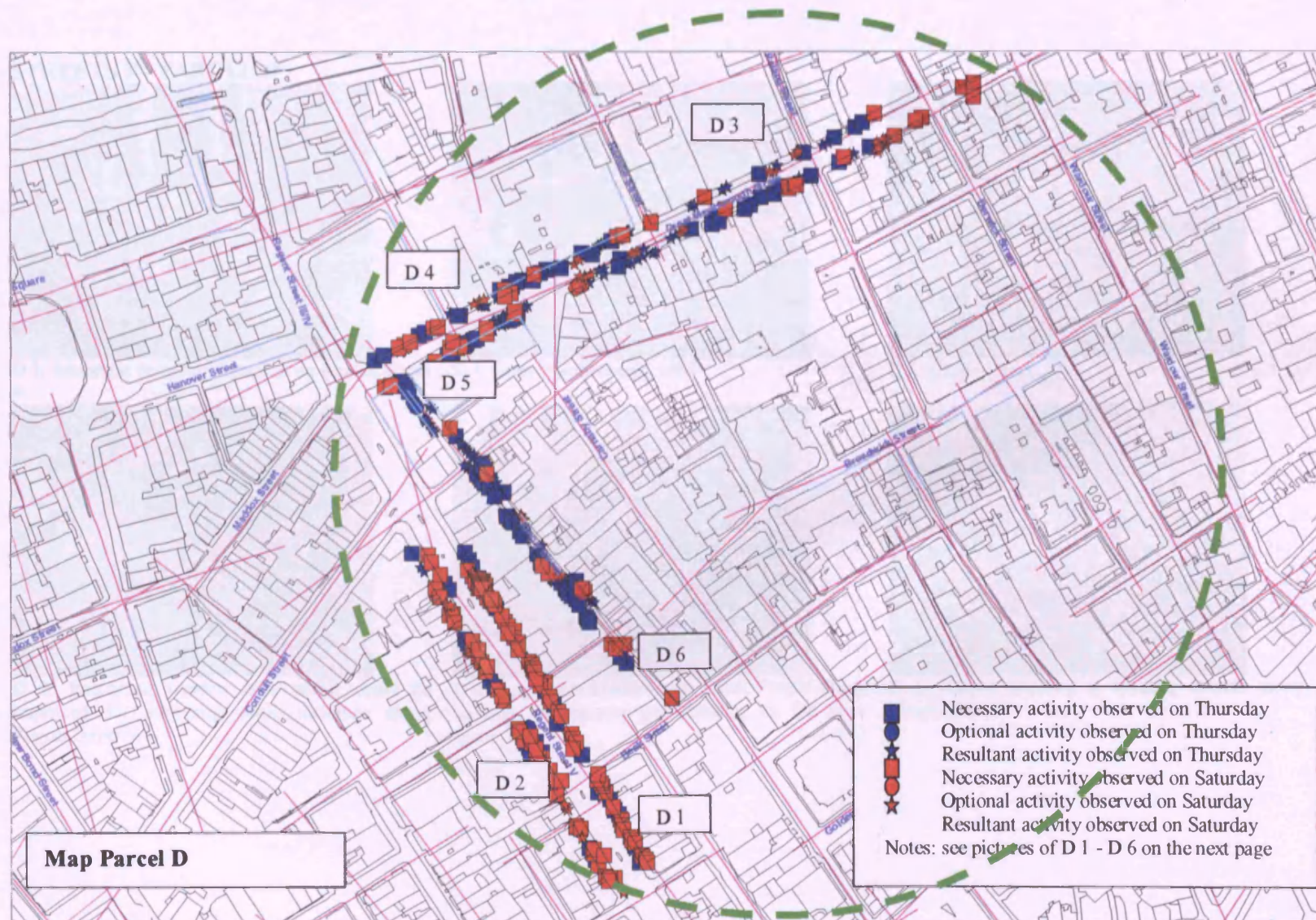


C 5. Hanover Street



C 6. A busy Hanover Street with people randomly standing and talking in front of banks, whilst some waiting at the cash point.







## STREETS IN PARCEL D



D 1. Important points of attraction on Regent Street V



D 3. Great Marlborough Street



D 5. Kingly Street



D 2. Interesting window sills which could be improved for attracting static activities along Regent Street V

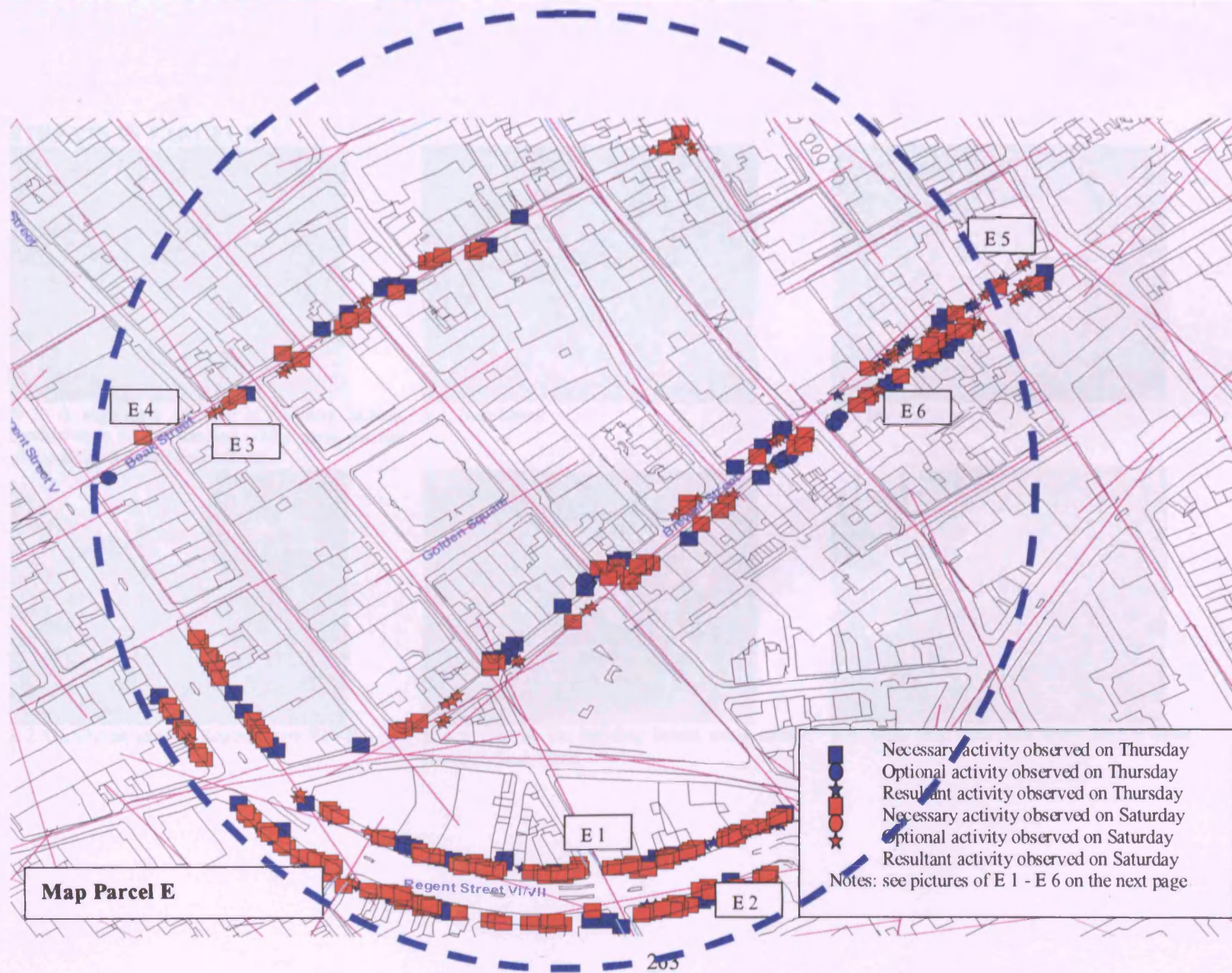


D 4. Busy Great Marlborough Street. People sitting on steps of entrance and standing by the news agent.



D 6. People smoking at building indents along Kingly Street





Map Parcel E

- Necessary activity observed on Thursday
  - Optional activity observed on Thursday
  - Resultant activity observed on Thursday
  - Necessary activity observed on Saturday
  - ★ Optional activity observed on Saturday
  - ★ Resultant activity observed on Saturday
- Notes: see pictures of E 1 - E 6 on the next page



## STREETS IN PARCEL E



E 1. A significant example of building facades conducive to a man standing whilst using mobile phone along Regent Street VI/VII



E 2. Curvilinear street of Regent Street VI/VII



E 3. Beak Street



E 4. A lady by the building indent using mobile phone on Beak Street

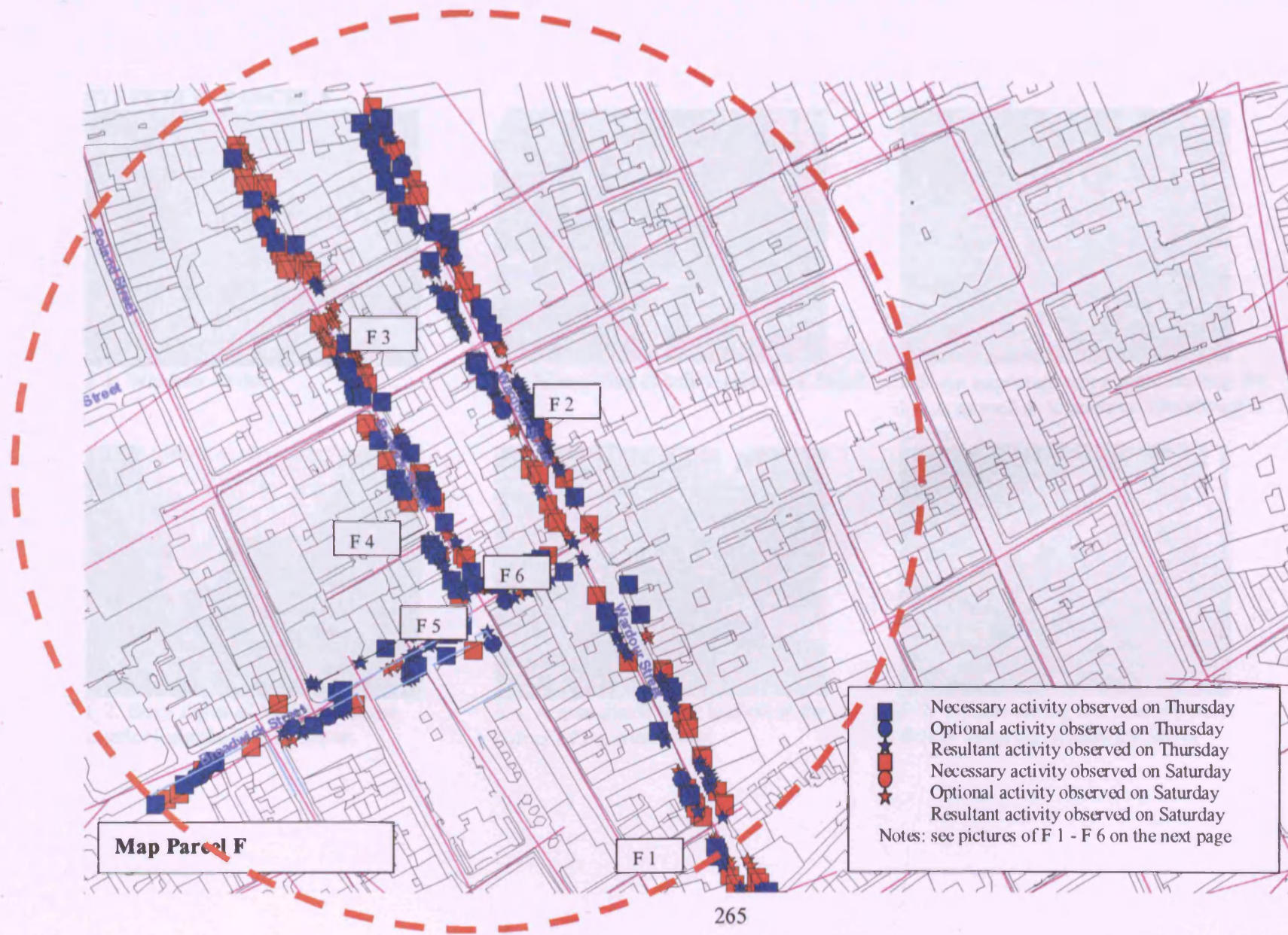


E 5. Brewer Street



E 6. Main retail attractions along Brewer Street





**Map Parcel F**

- Necessary activity observed on Thursday
  - Optional activity observed on Thursday
  - ★ Resultant activity observed on Thursday
  - Necessary activity observed on Saturday
  - Optional activity observed on Saturday
  - ★ Resultant activity observed on Saturday
- Notes: see pictures of F 1 - F 6 on the next page

**STREE**



## STREETS IN PARCEL F



F 1. Wardour Street



F 3. Men sitting at café on Berwick Street



F 5. An important news agent serving the locals as well as tourists on Broadwick Street



F 2. Busy sights of Wardour Street overlooking the British tower.



F 4. A man distributing leaflets at the corner of Berwick Street



F 6. Women sitting and chatting near flower kiosk on Broadwick Street





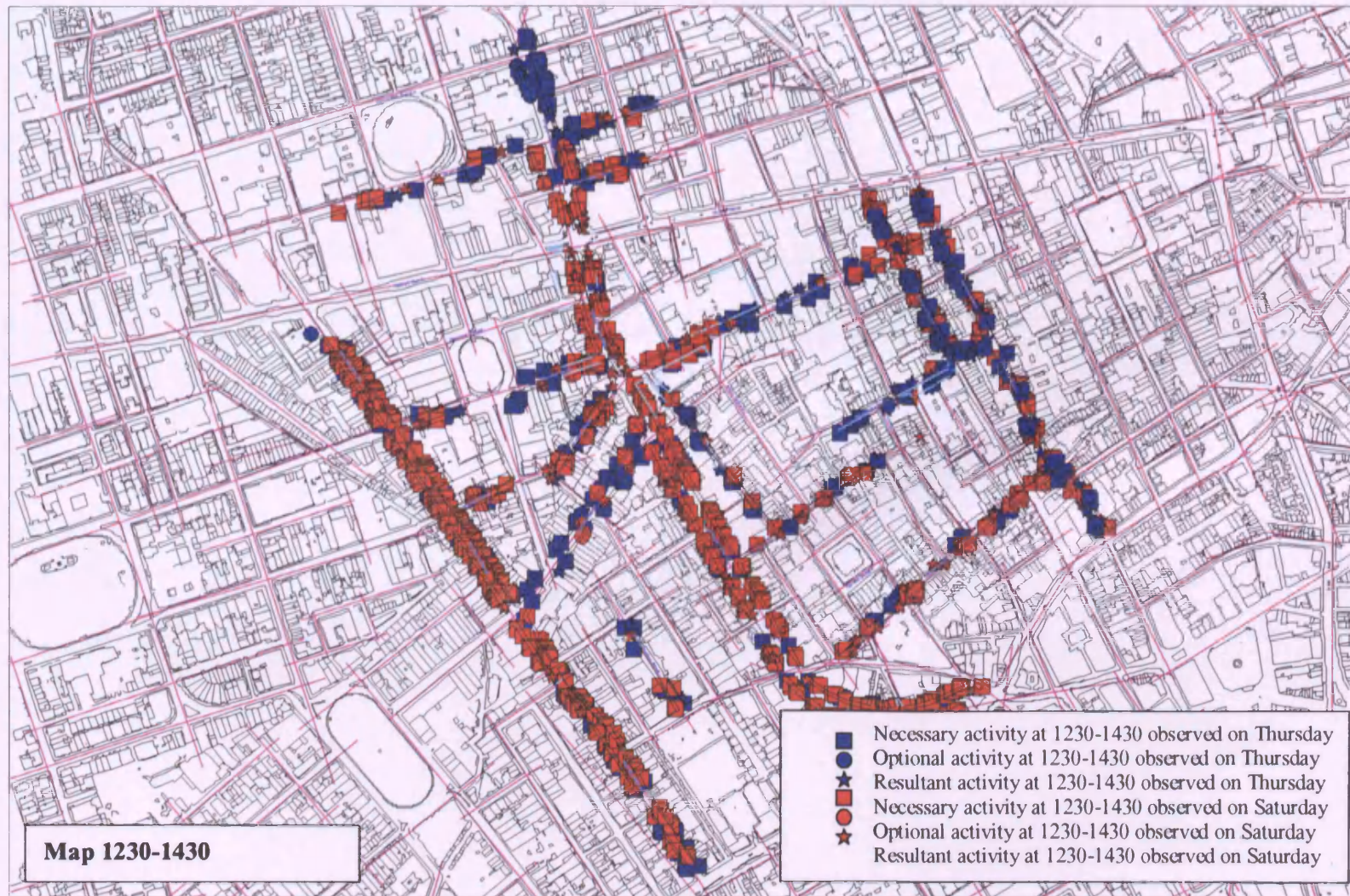




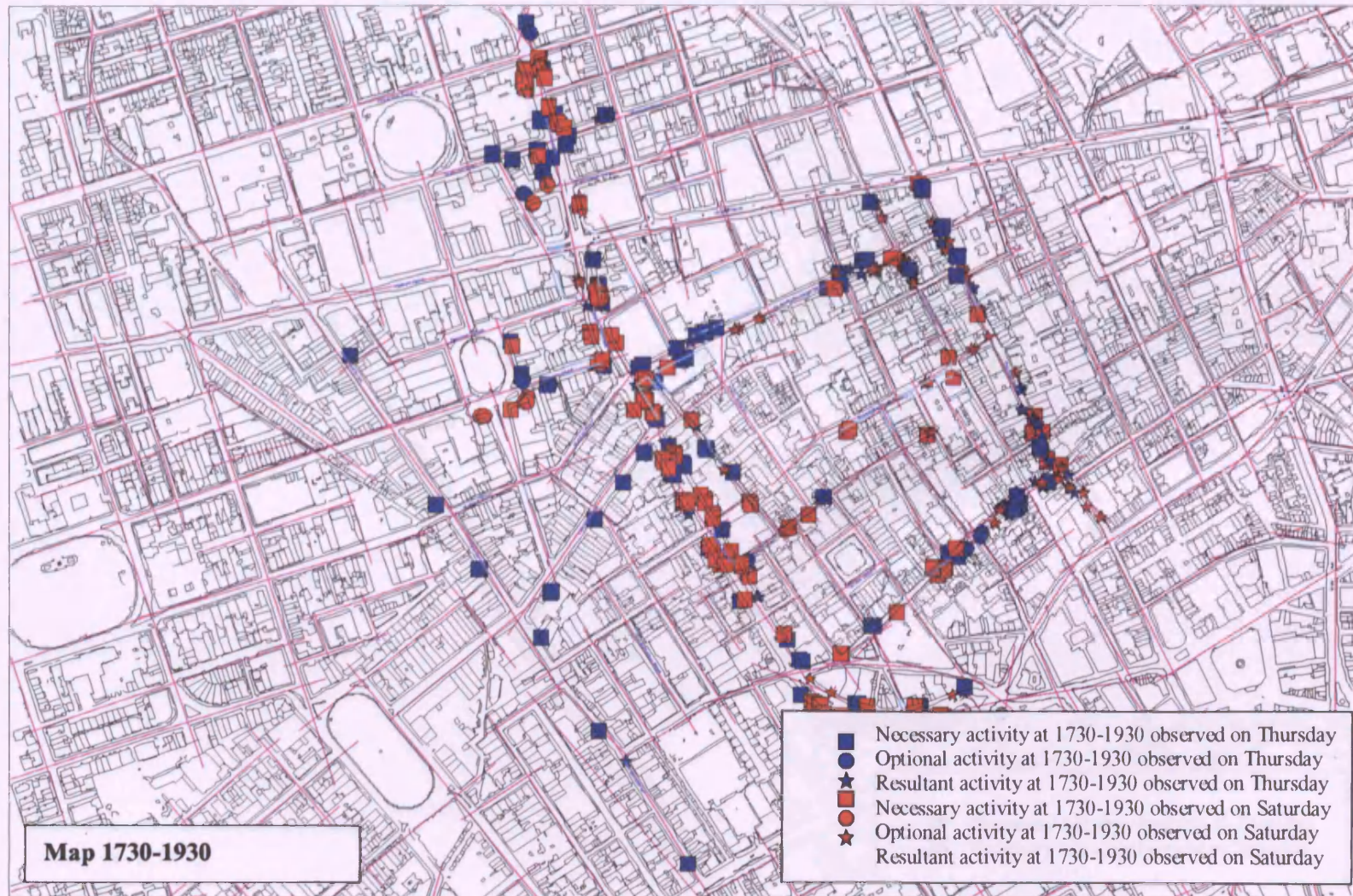




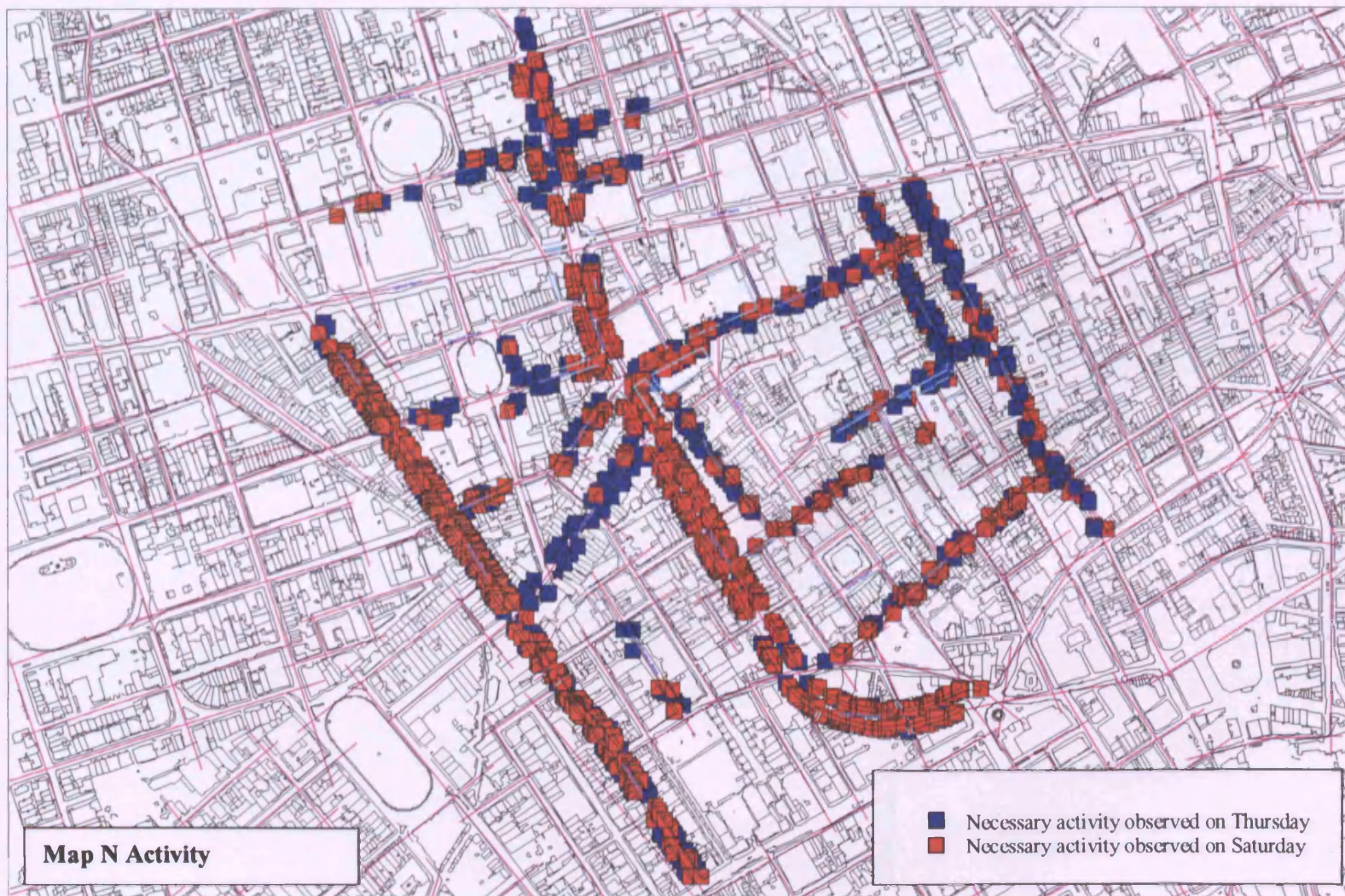




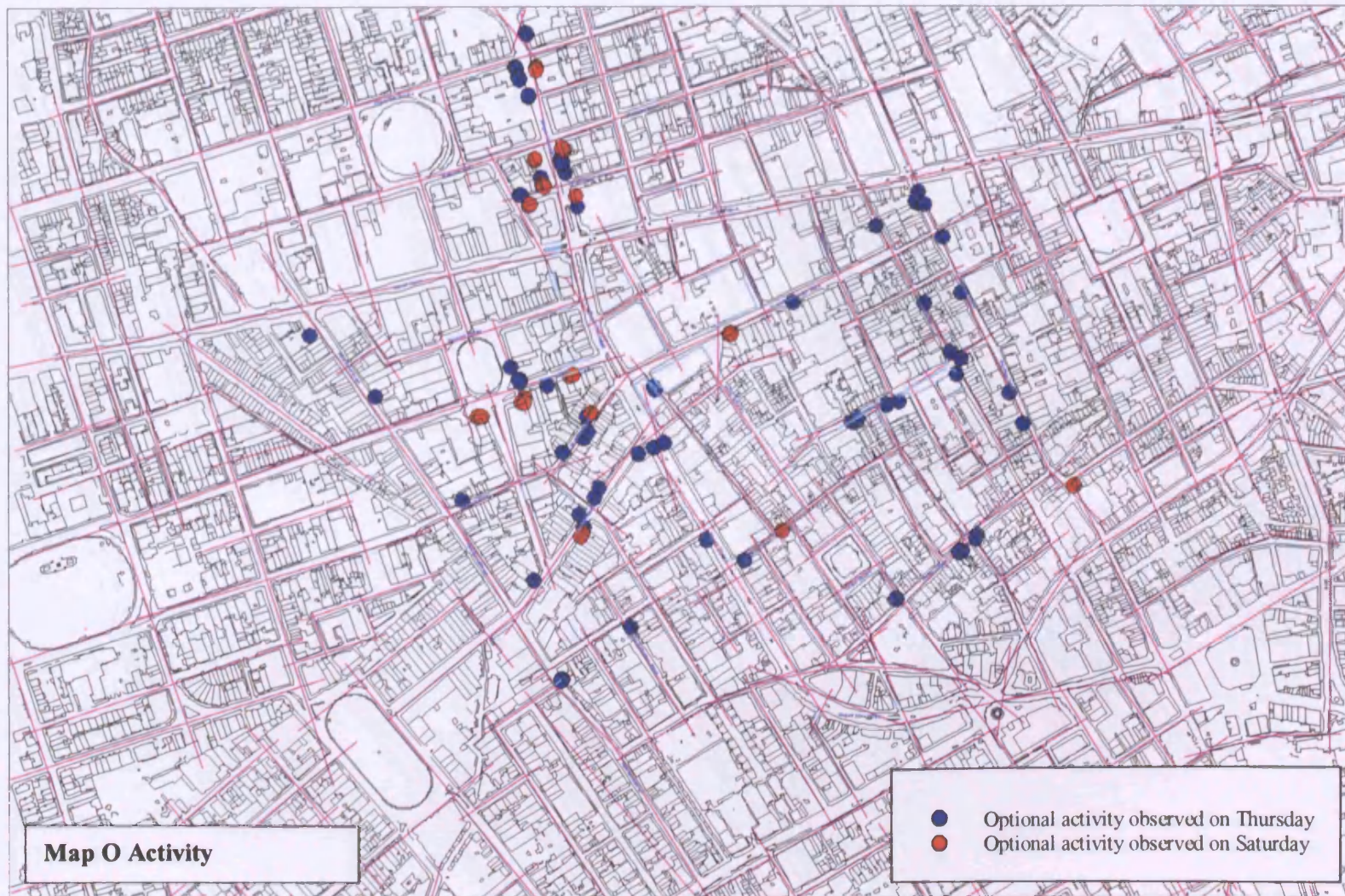




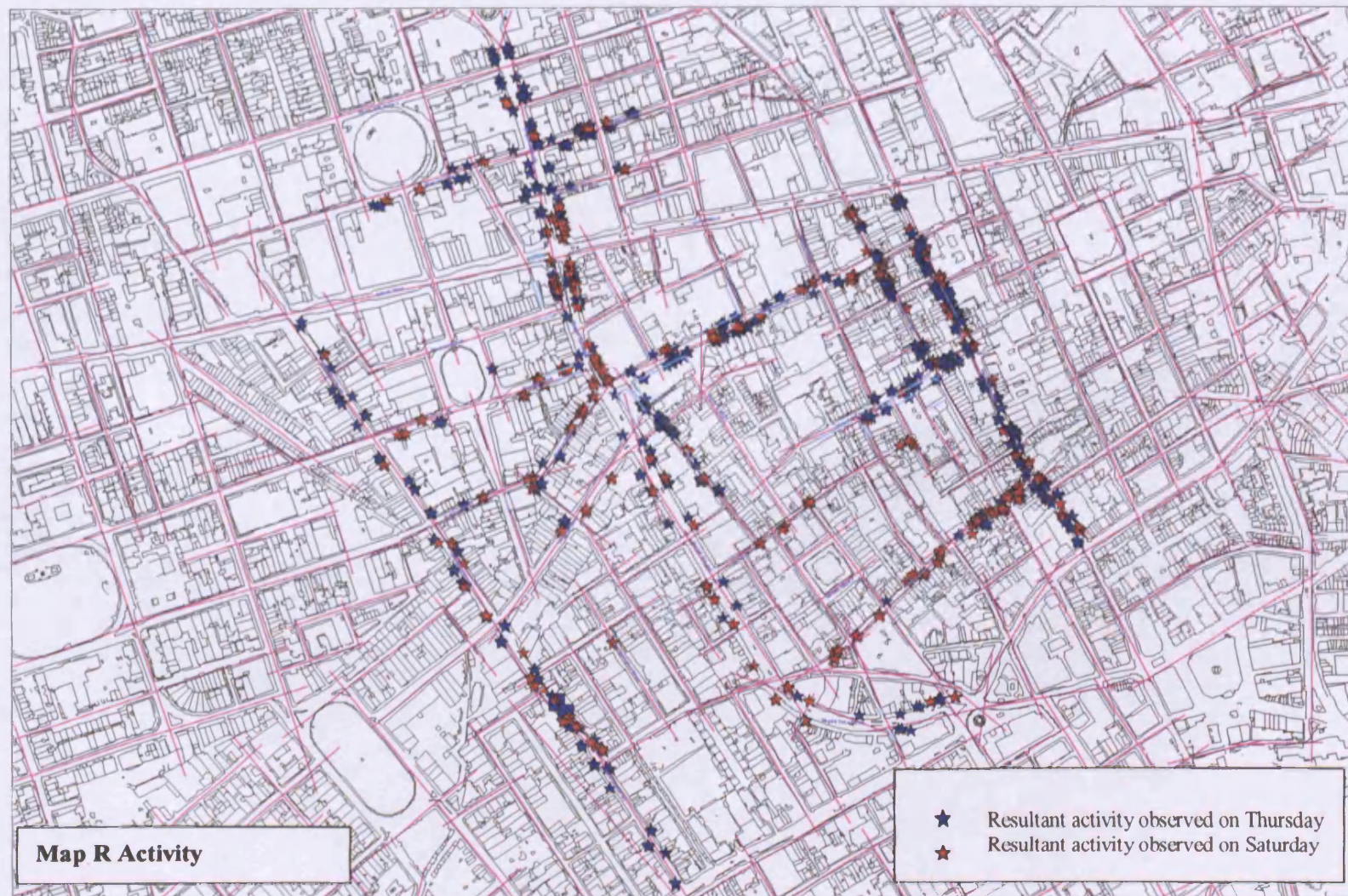




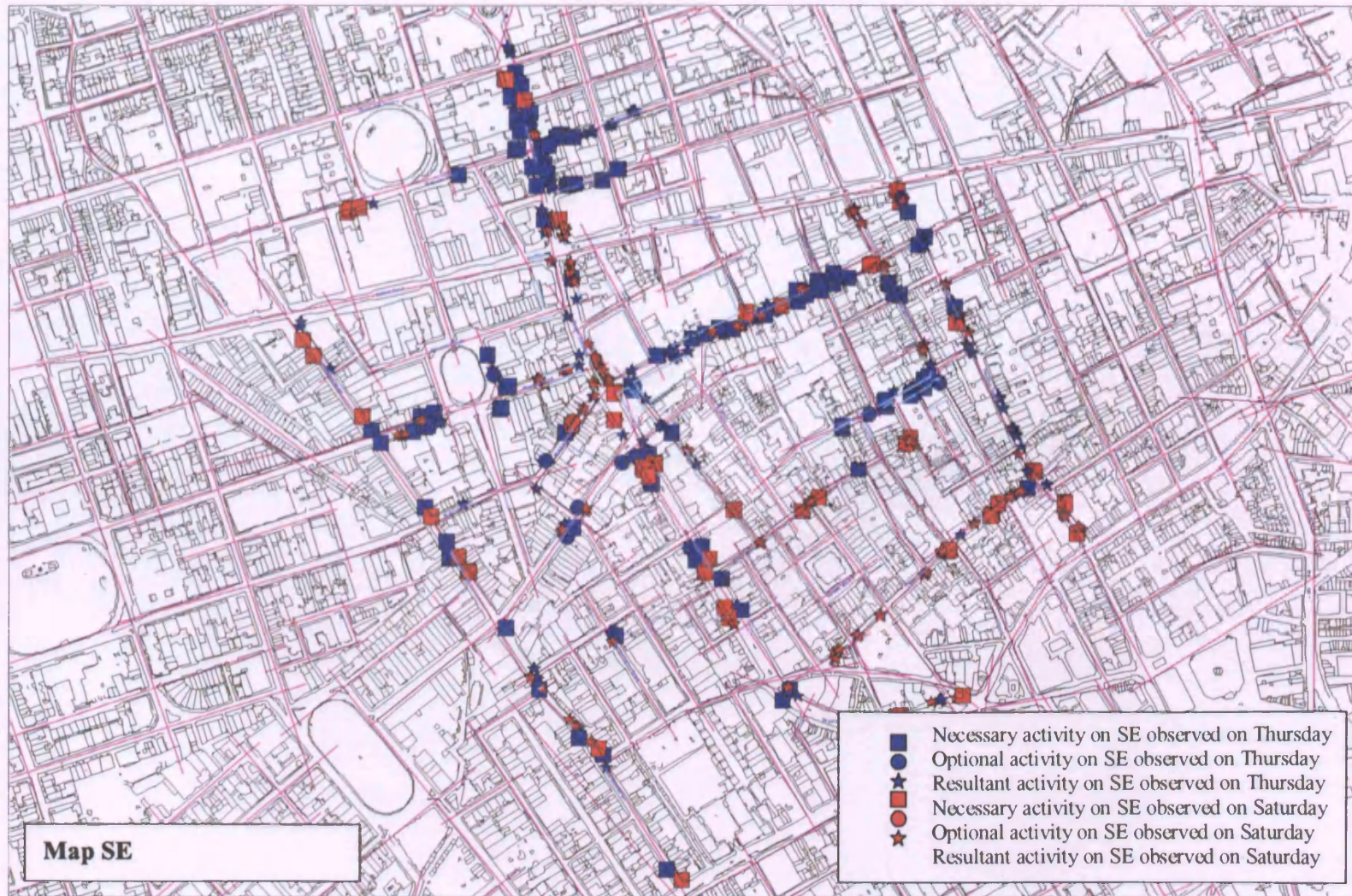




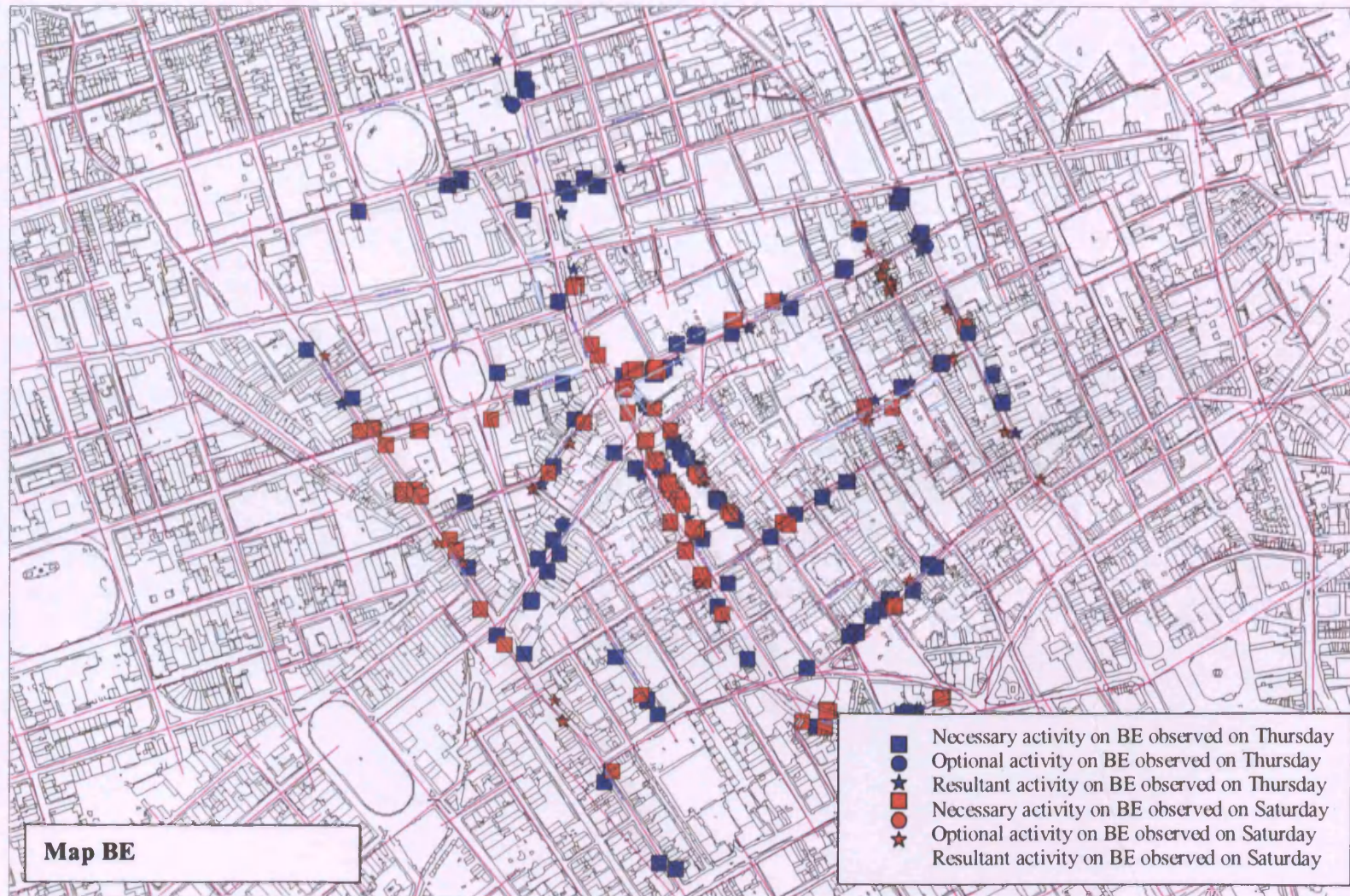




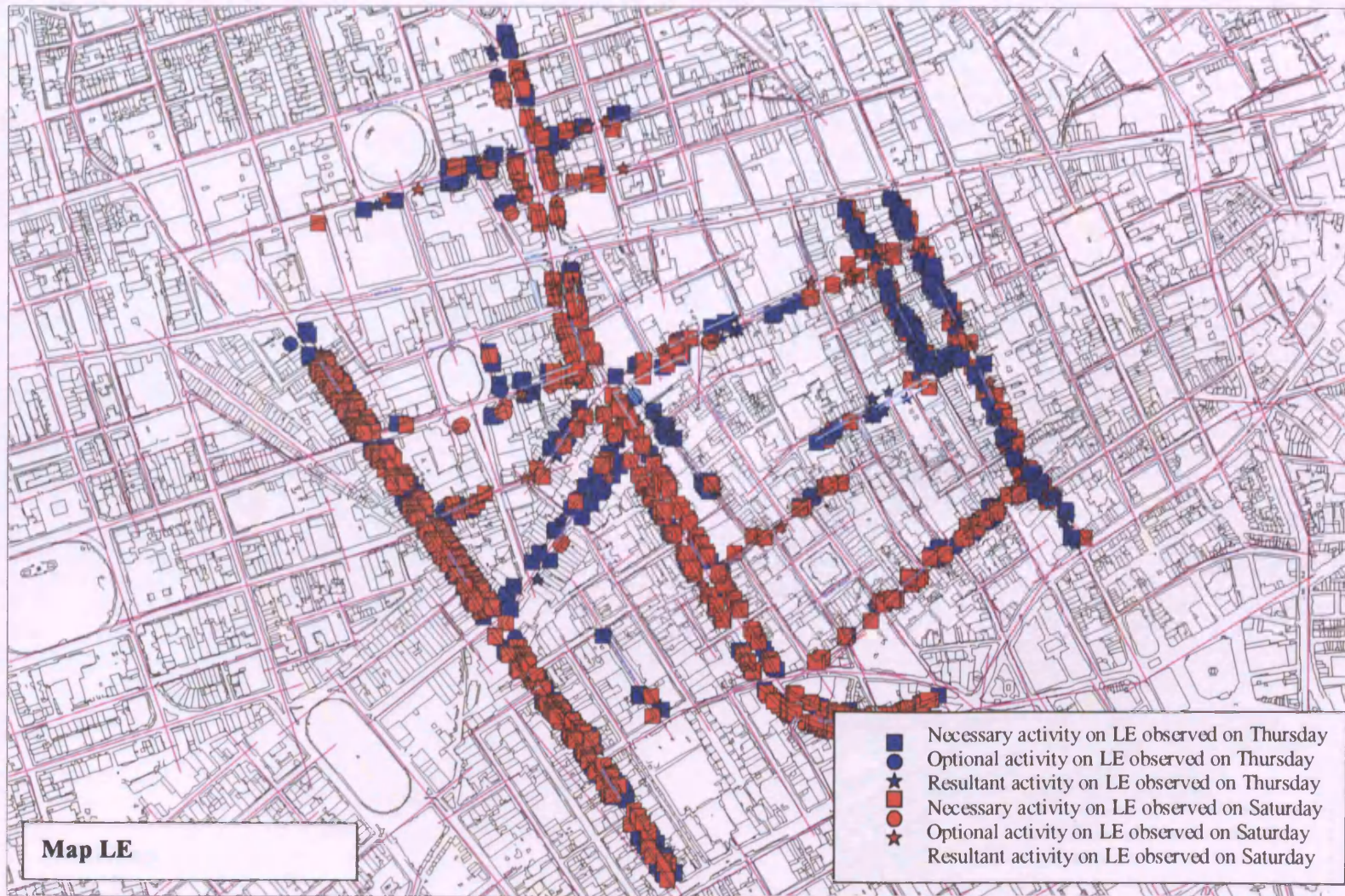




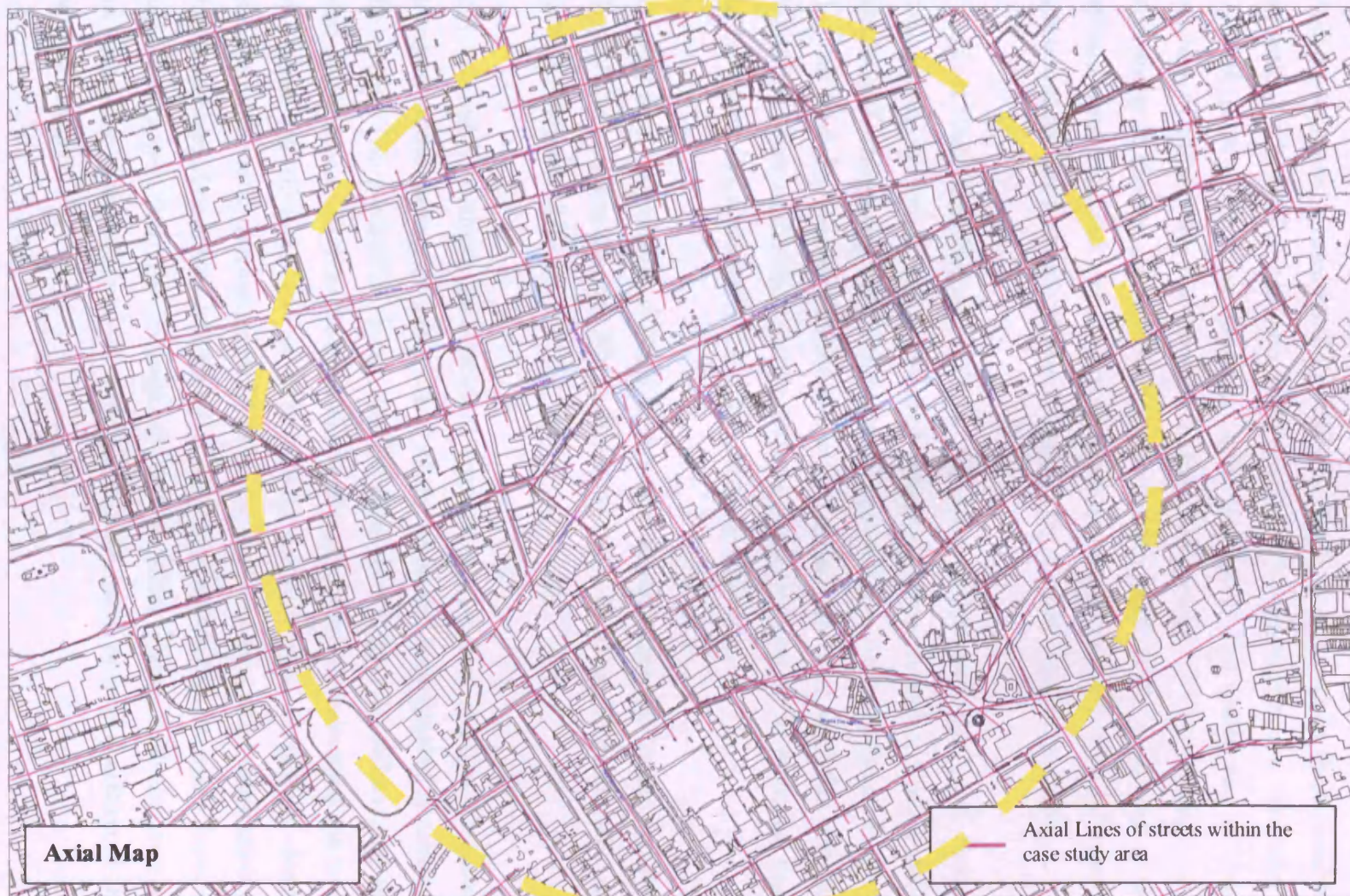












## 5.7. SUMMARY

This chapter has demonstrated how the social, socio-physical, and syntactic variables are distributed within the local and global network of streets in the studied area. Firstly, it reported the analysis of the different distribution of each of these variables in relation to the total distribution of static activities (NOR) in the area. Secondly, it reported the analysis of the interplay, or the strength of the relationship of these variables in influencing one another in the configuration of the sociability and accessibility of the streets. Finally, it reported the analysis of the proportion of the primary, secondary, and tertiary streets which are involved in achieving the balance between sociability and accessibility. The following summarises these analyses:

- Section One, *Distribution of Static Activities (NOR) and the Local Spatial Connectivity of Streets (r<sub>3</sub>)*, consisted of three parts: a, b, and c. Parts a and b calculated the frequency distribution and the descriptive statistical analyses of:

- a) The total distribution of NOR in the area spread according to: i) the observed days of the week; ii) the observed three times of the day; and iii) its individual type; the Necessary (N), Optional (O) and Resultant (R) activities.

- b) The total distribution of NOR in the area spread according to the types of physical design elements; the Street Element (SE), Building Element (BE) and Landuse Element (LE).

Parts a) and b) evaluate the statistical significance (p-value) and the frequency distribution (the average or mean value) of the social and socio-physical variables in the streets. The p-values of these variables show their impact (in influencing) the total distribution of NOR in the area. This enables the thesis to understand the 'size' or 'magnitude' of each type of static activity and each type of physical design element in the total distribution of NOR in the area. The frequency distribution of these variables determines whether the individual distribution in each street is higher or lower than the average of that variable. These analyses give an understanding of the range of these variables at the micro or local condition of the particular street.

Part c) is an independent analysis and is carried out according to space syntax methodology. It analyses the syntactic(al) variable consisting of the value of the local spatial connectivity, i.e. the local integration value ( $r_3$ ) of the eighteen streets studied. This gives an understanding of the distribution of this syntactic(al) variable in relation to the total distribution of NOR within the local and the global network of streets in the area.

The impact of the distributions of the variables above into the varied distribution of NOR between the parcels of the area (A, B, C, D, E, F), in the individual streets, and in the hierarchies of streets are then compared. This enables the thesis to understand the local and global aspects of the distribution of static activities in the eighteen streets (see Table 5.1).

Section Two is *The Relationship between the Social, the Socio-physical, and the Syntactic(al) variables to the Configuration of the Sociability and Accessibility of Streets*. The impact of these variables on the total occupation of NOR is analysed in terms of their possibilities and the probabilities of influencing one another's distribution in the streets. Their degree of influence, which gives the strength of the relationship of these variables to one another's distribution, is assessed [are carried out] in the correlation and regression analyses. This measures the configuration of the sociability and accessibility of the streets. Section 5.3 measures the correlation between the distribution of NOR on each physical design with the total NOR in the area. This configures the sociability of the street. Section 5.4 correlates the distribution of NOR on each physical design with the integration value ( $r_3$ ) of the streets. This measures the configuration of their accessibility.

The strength of the relationship of each variable is given as the correlation coefficient value ( $r$ ) and the coefficient determination value ( $r^2$ ). When the  $r$ -value is higher than 0.5 (be it positive or negative), the relationship between the variables is said to be strong, and when the  $r$ -value is below 0.5, their relationship is weak. This analysis provides a quantitative measurement of the strength of the relationship of each variable and its ability to influence the accommodation and distribution of static activities in the area. This helps to determine the relevant variable of the street which would need to be given more emphasis in designing streets for people.

*Section Three: Comparing the Proportion of Sociable and Accessible Streets.* This section adopts a chi-square analysis, which measures the proportion of primary, secondary and tertiary streets with their level of sociability against their respective  $r_3$  values. This means that the level of the distribution of static activities occupying the physical design in each type of street is analysed against its  $r_3$  value. The results suggest whether a street with a high sociability level will also manifest a high integration value.

The chi-square analyses the expected quantity of streets which would need to be designed with a certain level of occupancy of static activities in order to achieve a balance between sociability and accessibility. Ultimately, this provides an understanding of the hierarchy of the streets with respect to their individual capacity in accommodating and distributing static activities within the local and global network of streets in the area.



## **CHAPTER 6**

### **Discussion: The Social, Socio-physical and Spatial Implications of People in Streets**

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The previous chapter showed how the total distribution of Necessary, Optional and Resultant activities in the area was distributed in the eighteen streets. It raises the following two questions as keys for interpreting the results: firstly, why did the same types of streets (between the primary, secondary, and tertiary streets), record different distributions of NOR? Secondly, why did some social, socio-physical, and syntactical variables correlate highly with the NOR in certain types of streets?

Section 6.1 of this chapter relates the results to the process of configuring the sociability and accessibility of the primary, secondary, and tertiary streets in the studied area. Section 6.2 discusses the strengths and weaknesses of the relationships between the three variables to the sociability of the streets. The section subsequently raises the possibility and probability of estimating and predicting the occupation of static activities with the combination of these variables in configuring street sociability.

#### **6.1. THE SOCIABILITY AND ACCESSIBILITY OF THE PRIMARY, SECONDARY AND TERTIARY STREETS**

This section is divided into three parts. Sections 6.1.1a, b, and c, discuss the reasons for the differing distributions of the social, socio-physical and syntactic(al) variables in the primary, secondary and tertiary streets. Subsequently, section 6.1.2 discusses the reasons for the different strengths of relationships between these variables and the sociability and accessibility of the streets. It focuses particularly on the correlation analysis of these variables to the distribution of NOR in the primary, secondary, and tertiary streets. Finally, section 6.1.3 discusses the imbalance proportions of the primary, secondary, and tertiary streets in accommodating and distributing static

activities in the studied area. It discusses the chi-square analysis of the frequency of these streets in relation to their levels of sociability.

### 6.1.1. Distributions of the Social, Socio-physical, and Syntactic(al) variables on the Primary, Secondary, and Tertiary Streets

	NOR	N	O	R	SE	BE	LE	r_3
<b>Primary Street</b>								
Regent Street I/II	293	149	39	105	95	37	161	4.159
New Bond Street	597	468	3	126	39	45	513	3.139
Regent Street III/IV	367	257	4	106	90	67	210	3.317
Regent Street V	204	181	2	21	20	52	132	3.883
Regent Street VI/VII	215	175	6	34	27	22	166	3.022
Wardour Street	341	135	10	196	94	24	223	3.238
Sub total	2017	1365	64	588	365	247	1405	
Average								3.459
<b>Secondary Street</b>								
Margaret Street	113	58	0	55	29	17	67	3.705
Maddox Street	72	33	7	32	25	13	34	2.397
Conduit Street	60	38	8	14	12	8	40	2.301
Great Marlborough Street	230	123	12	95	80	38	112	2.805
Beak Street	73	41	8	24	27	11	35	2.877
Berwick Street	167	88	6	73	37	23	107	3.133
Sub total	715	381	41	293	210	110	395	
Average								3.069
<b>Tertiary Street</b>								
Great Castle Street	63	37	8	18	18	12	33	2.781
Old Burlington Street	22	14	1	7	4	4	14	1.833
Hanover Street	85	54	7	24	30	7	48	2.485
Kingly Street	82	40	2	40	23	35	24	2.524
Brewer Street	168	83	7	78	41	19	108	2.252
Broadwick Street	108	44	6	58	35	27	46	2.784
Sub total	528	272	31	225	151	104	273	
Average								2.777
TOTAL	3260	2018	736	1106	726	461	2073	

Table 6.1 Overview of the distribution of NOR (N, O, R), (S.E, B.E, L.E) and r\_3 according to the hierarchy of streets.

This section further analyses the distributions of the three variables, which were shown in table 5.1 of chapter 5. Table 6.1 cross-tabulates the NOR in the primary, secondary, and tertiary streets. This distribution is then split according to its individual type (N, O, R) and its distribution on each type of physical design (S.E, B.E, L.E). The last column shows the syntactic(al) values of the local integration (r\_3) of the streets.

#### a) Distributions of NOR and N, O, R

This table confirms that a high distribution of NOR did not consistently correspond to the hierarchy of streets. For instance, the primary streets, which would normally accommodate a high distribution of the movement of people and would also be expected to record a high distribution of NOR did not necessarily do so. Instead, a high distribution of NOR was recorded on the secondary and tertiary streets, which accommodate lower distributions of people's movement. Some secondary streets (e.g. Great Marlborough Street) recorded a higher distribution of NOR than some primary streets (e.g. Regent Street V and Regent Street VI/VII). Tertiary streets such as Brewer Street recorded a higher distribution of NOR than secondary streets such as Maddox Street.

Table 6.1 additionally shows that most primary streets recorded a high distribution of N activity (1,365 observations), followed by the secondary (381 observations) and tertiary (272 observations) streets. However, some primary streets recorded a higher distribution of N activity than others of their type. New Bond Street recorded the highest N activity amongst its type, whereas O activity in it was almost non-existent. The O and R activities also showed similar results [to those] of the N activity. Interestingly, some O and R activities were recorded higher on secondary and tertiary rather than primary streets.

The above firstly leads to a particular observation of the R activity of people chatting and entertaining, and street vendors selling goods. Table 6.1 shows that the distribution of R activity is higher than O activity in the area (see also table 5.3 in chapter 5). This finding is contrary to that of Jan Gehl's (1975). Gehl found that R activity, or what he referred to as social activities and interaction is likely to be present when both N and O activities are given better conditions to exist. Gehl said that, '*When the quality of outdoor areas is good, optional activities occur with increasing frequency. Furthermore, as the level of optional activity rises, the number of social activities usually increases substantially*' (ibid., p.12) (see also chapter 2).

Gehl suggested that the distribution of R activity is lower than O activity. He argued that: *social activities are indirectly supported whenever N and O activities are given better conditions in public spaces. O activity occurs only under favourable exterior conditions and when exterior conditions are optimal* (ibid. p.13). Table 6.1 has instead shown that R activity could actually exist independently from the N and O activities.

Many streets have evidently acquired higher distributions of R activity than N and O activities. Such results raise a more precise question: why are some types of static activities more highly distributed on some primary, secondary, and tertiary streets than on others?

The above question raises the need to understand the impact of the social psychological behaviour of people in streets. Studies on social psychology deal with both verbal and non-verbal communication. Argyle (1969) claims that many studies have been done on how people's verbal communication affects their behaviour but much still remains to be understood about non-verbal communication. Lawson, (2001) understood this view, saying that '*the fascination of non-verbal communication is that much of it is involuntary and even may reveal feelings or attitudes we would rather conceal*' (p.128). Essentially, Lawson recognises the underlying focused or unfocused interaction in the non-communicative behaviour of people. This thesis relates the way people communicate non-verbally with the street environment to the way people interact socially (see chapter 3).

Studies by social psychologists on the effect of crowds on people have found that people exist in a certain space or environment because of other people. A crowd is often referred to as the 'stimulation' which causes 'social influence': and so there is the occurrence of 'small group ecology' (Stokols 1976). Such studies suggest that a crowd is often generated by the existence of 'social influence' between people in an environment (see chapter 3). Whyte (1980) observed that people like to watch people and thus concludes that people attract people. Consequently, this aspect of non-verbal communication shows a form of social influence between people that takes place in an environment. The cheering crowds could also socially influence athletes competing in a stadium arena (Argyle 1969, Sommer 1969).

Gazing, waiting, reading, or any body gestures manifest by people standing and sitting especially on their own, and not interacting with other people, may describe the 'unfocused interaction' between people in space. It may also explain how people exist in space because of other people. These behaviours can range from the necessary, optional or resultant types of static activities. It therefore helps to explain how a group of static activities of people could in reality exist in some small streets instead of the large ones.

On the other hand, it is also understood that a crowd does not necessarily attract people or another crowd. The theory of Stokols (1976) suggests that a crowd can cause a degree of psychological stress to people in urban areas. Such a situation can be seen on streets and in public places in urban areas. It can be explored from the perspective of the 'personal space' of the individual person. 'Personal space' is referred to as 'the invisible boundaries surrounding a person's body, which would prevent intruders from coming into it', termed 'proxemics' (Sommer 1969, p.26). Sommer believed that 'proxemics' function in reverse of social influence, which leads to the formation of a crowd. For instance, people tend to shy away from a crowd in order to secure their own personal boundary of space within the environment (see chapter 3).

According to the standard transport design procedure, secondary and tertiary streets are associated with a low distribution of movement of people (Richard 1966, Elkington et. al 1976). However, this thesis finds both types of streets with both high and low distributions of static activities. The high distributions of static activities on the secondary and tertiary streets may be related to the above effect of personal space formation between people. Such an effect might also explain why small streets, with low distributions of movement of people, are sometimes highly occupied with people's static activities. It may also explain why some primary streets have high movement of people yet are less occupied by static activities.

## **b) Distributions of Socio-physical Variables**

In order to understand the above more specifically, table 6.1 tabulates the distribution of NOR on the SE, BE and LE according to the primary, secondary, and tertiary streets. This table shows that primary streets recorded the highest distribution of NOR on all physical design elements, followed by the secondary and tertiary streets. However, not all primary streets sustained a high occupancy of static activities. Some physical designs on secondary and tertiary streets were also as highly occupied as those on primary streets.

Amongst the three categories of physical designs, the LE was the most occupied by static activities (see also section 5.1.2 in chapter 5). This could simply be argued to be related to the convention of urban design practice, which emphasises landuse as the

key physical factor in designing streets for people. Such conventions for improving and managing streets are normally concerned with the general pattern of landuse on the commercial streets to ensure a good pedestrian flow into them (Pushkarev and Zupan 1975, Haas Klau 1999). However, architecturally this could also require the impact of the physical designs of landuses on people's behaviour to be considered. Indirectly, designers have been promoting such impacts of landuses on people. Designers have stressed the importance of having fine retail frontages providing canopies at entrances, sitting spaces in public spaces, and well-designed building facades (Rudofsky 1969, Moudon 1987).



Figure 6.1. Unattractive locations were observed with people smoking and eating. Such uses increase the possibility of streets affording informal static activities.

The varied occupancies of the static activities above raise the question: why were some physical designs heavily occupied by static activities? The answer could be related to the aesthetic appearance of some physical designs. Some physical designs could be pleasant to the eye and conducive to certain behaviour (Gehl 1975, Haas Klau 1999). It is expected that pleasant physical designs would be more attractive to, and thus would induce more people to sit or stand and eat by them. However, there



are also unattractive physical designs, such as steps at building frontages, and the windowsills, which were heavily occupied by these activities (see figure 6.1).

Some repetition was observed between certain types of physical design and static activities. However, repetitions do not always occur, as people do not always use the physical design in the original purpose. People create mixed and discreet static activities. They were recorded on the particular physical designs. Such uses brought attention to static activities as important urban variables which would need to be analysed and understood (see section 5.1.2 in chapter 5).

Such observations also bring out the importance of some formal and informal static activities in the everyday life of people on streets (Whyte 1980). Earlier, chapter 2 described the ways the activities are executed in the 'focused' and 'unfocused' interactions amongst people (Goffman 1956). The above observations further emphasise the similarity of the particular interaction and the way people react to the physical environment of streets. For example, it is normal to observe people standing and queuing to withdraw money at cash points. This activity was conducted precisely, i.e. 'formally', according to the function or purpose of this physical design. When such a situation occurs, people 'directly interact' with physical designs and exhibit a 'focussed interaction' with the environment.

People also react 'informally' or 'indirectly' with physical designs and manifest unfocussed interaction to the environment. This is a situation when instead of using the cash-point to withdraw money, people stand or sit by it whilst using their mobile phones, eating, drinking, or chatting to one another. Such static activities are conducted 'informally' or spontaneously. They do not match the specific design purpose of the cash-point (Rapoport 1976, see chapter 2).

The above situations of how formal and informal static activities occur might explain their different occupations on the physical designs in streets. Static activities neither always densely occupy nor do they restrain in a specific hierarchy of streets. The way static activities exhibit focused and unfocused interactions with physical designs reflects their importance as theoretically and practically incorporated in the functional design of streets for people. Failing to realise this would limit an understanding of the

detailed evidence of the physical designs, which may influence an increase in the appropriation of static activities on streets.

The above has also demonstrated that it is not definite that the physical designs, which are conducive to people would attract heavy occupations of static activities. This raises the question of whether the physical designs are also accessible to the occurrence of static activities in streets and leads to an analysis of the physical designs within the local and global network of streets in the area.

### **c) Syntactic(al) Variables**

The way static activities are distributed in the spatial environment of streets is normally dealt with by transport engineers, urban scientists and geographers, who study the activities of people within the local and global context of cities (Golledge and Stimpson 2000). This section focuses on the possibility that spatial properties of the streets are able to locally accommodate as well as to globally distribute static activities within the studied area. Theoretically, it considers the focused and unfocused interaction within these distributions of static activities.

Continuing from table 5.5 (chapter 5), the last column of table 6.1 tabulates the average of the  $r_3$  values of the axial map analysis split according to the hierarchies of the eighteen streets. The average  $r_3$  value of the primary streets is 3.459, the secondary 3.069, and the tertiary 2.777. These values correspond to the hierarchies of these streets. The high-integrated streets belong to the primary streets with high levels of connectivity to other streets within the 'configuration' of the studied area. However, table 6.1 also shows that some primary streets with a high movement of activities were not equally highly occupied by static activities. In contrast, certain secondary streets recorded a high distribution of NOR, some of them even higher than primary streets. Great Marlborough Street with  $r_3 = 2.805$  recorded 230 observations of NOR as compared to Regent Street V with  $r_3 = 3.883$  and 204 observations of NOR. In much more extreme cases, some tertiary streets (e.g. Brewer Street and Broadwick Street) have recorded higher NOR than the secondary streets (e.g. Maddox Street, Conduit Street, Beak Street).

Clearly, the above raise the question of why the distribution of NOR on some streets does not correspond to their hierarchies. The NOR seems to contradict the integration values of the street. This could imply that the particular streets with high movement, high visibility, and high accessibility, were able to distribute a high level of movement activities, but not people's static activities. Could it suggest that other urban variables, which are not directly related to movement activities have also influenced the occupation of static activities in streets? Has the high occupation of static activities been influenced by its particular type, which intensely occupied secondary and tertiary streets (table 6.1, see also section 5.1.1.c in chapter 5)? Otherwise, have high occupations of static activities been influenced by the heavily occupied physical designs by static activities some streets? Could it suggest that the space syntax technique of analysis has not explicitly addressed the social and socio-physical aspects of streets?

Conceptually, the integration values indicate the accessibility levels of streets as capable of distributing a high or low volume of moving activities of people and traffic. The above results suggest that the analysis of the integration value of space according to space syntax methodology did not sufficiently consider the accessibility of the street to distribute people's static activities. Apart from ensuring the efficiency of the street to channel the movement of people in cities, the design convention for making streets accessible for pedestrians would probably also need to ensure that streets are able to 'distribute' and 'channel' the 'volume' of static activities on physical designs within the local and global configuration of an area. It is therefore important also to incorporate the spatial aspect of static activities in the social uses of streets into their accessibility design. It simply indicates that streets would need to 'collect' or 'accommodate' static activities within their individual locality prior to distributing them to the global network of streets in the particular area.

In rather a broader view of people's behaviour than that taken by natural movement theory, Goffman's (1956) references to people as 'social encounters' or as 'co-presences' are not specifically defined to those in dynamic or static positions. It is understood that both aspects of people demonstrate their focused and unfocused interaction with one another. Yet, streets designed for people have paid very little attention to these interactions in people's behaviour with the environment.

According to Lawson (2001), people “communicate” with the environment in both stationary and moving positions. Urban designers should know how to identify potential spaces for accommodating such interaction by ‘stopping people’ who move about in streets. The spaces would inherently take account of people’s ‘spontaneous’ reactions and rationale in their formal and informal activities in streets. Urban designers would need to encourage and provide spaces in streets for these activities to take place. Such reactions of people have not been addressed and have not been fully comprehended in urban design practice. The limitation of these activities taking place in streets could be the reason why some primary streets otherwise with high integration values, high accessibility, high visibility, and a high distribution of movement of people, are not well occupied by static activities.

The above differences in the way social, socio-physical, and spatial variables influence distributions of NOR raise the question to what extent the variables differently influence the distribution of NOR in the primary, secondary and tertiary streets. This is addressed by analysing the strengths (degree of influence) of the distribution of NOR on physical designs on the total NOR in the area, and on the integration values of the primary, secondary and tertiary streets.

### **6.1.2 Highlights of the Correlation Analysis concerning the Sociability and Accessibility of the Primary, Secondary and Tertiary Streets**

In the overall analysis of the sociability and accessibility of the area, table 5.6 in chapter 5 showed that the sociability of streets was good but their accessibility in the area bad. This specifically raises the question why some physical designs correlated well with the total distribution of NOR whilst others did not, and why they did not correlate well with the  $r_3$  of some primary, secondary and tertiary streets. These questions are answered by relating the theoretical reasons above to the practical sense of why there was a low occupation of one type of static activity in certain types of streets.

This section focuses on the correlation analysis between the distribution of NOR on physical designs with the distribution of each type of static activity in the studied area (see table 5.8 and figure 5.11 in chapter 5). It aims to understand whether the key variables correspond to one another – complementing or impeding each other’s

presence in streets – hence, promoting or depriving the function of streets for static activities. The streets' sociability and accessibility are discussed in relation to being able to encourage or discourage static activities.

#### **a) On Primary Streets**

Table 6.1 shows that the highest NOR is recorded on primary streets, and most of the streets were highly occupied by N activity. Regent Street VI/VII is the only primary street that acquired a perfect correlation between its NOR to N activity but had a negligible or zero value for both O and R activities. Regent Street I/II showed a constant presence of static activities throughout the whole day. The highest distribution of NOR was recorded on New Bond Street, but was not consistently present. As on Regent Street III/IV, the physical designs were highly used by static activities. The physical designs on Regent Street V, however, were less used than on other parts of Regent Street.

One of the primary streets, Wardour Street, was more occupied by R than N activity. All types of activity in this street were constantly present during the three times observed. The street seems to be the most sociable amongst its type in the area. Additionally, it also acquired the highest correlation between the distribution of NOR on its physical designs and the total NOR in the area. How was the situation occurred, and how could one measure whether the distribution of NOR on primary streets in the area is consistent or not? Are the primary streets in the studied area sociable?

The correlation analysis of the sociability of primary streets found that only the distribution of NOR on LE had acquired a strong correlation with the total NOR in the area (see table 5.10 and figures 5.14.a, b, and c in chapter 5). Only this distribution showed an coefficient r-value higher than 0.5 (see chapter 4). Such a result shows that primary streets exhibited low sociability levels for static activities. The low r-values might have caused the inconsistent distribution of NOR on most primary streets in the area.

Answers to the above questions are further attempted by considering the accessibility levels of primary streets (see table 5.11, in chapter 5). Though the distribution of NOR on LE showed a high correlation with the total NOR, it showed a negative

correlation with the  $r_3$  values of the primary streets. This implies that even though primary streets are highly accessible for people walking, occupation is low when it comes to static activities. This occupation is reversed for people's movement activities. It might be the result of the type of static activities, which have a monotonous and uninteresting presence in primary streets. Other than Wardour Street, most N activity was observed on the LE on most of these primary streets (see maps N activity and LE).

The least presence of O activity could also have caused the low occupation of static activities in the primary streets (see table 6.1). O activity includes taking pictures and reading - those activities that people do when they feel more relaxed in a certain environment. These activities take place when the physical condition of the street is conducive to them (Gehl 1975). O activity, such as eating, drinking, reading and taking pictures, was not much observed in primary streets in the area except in Regent Street I/II, the north part of Regent Street, where they were highly occupied. This is an interesting paradox in the case of a primary street like Regent Street, an important shopping street where one would expect to observe more O activity (Hobhouse, 1997).

As in the above case of N activity, browsing at window-displays, it is argued that if only one type of physical design were present on primary streets, one would expect it to be this. On the basis of people's personal space, these primary streets would be crowded with people only browsing at window-displays and there would be no place for people to sit and relax - for O activity such as drinking, eating, and reading - (of Sommer 1969). Other types of physical designs would need to be made available in order to encourage a mixture of static activities on a specific type of street. This strengthens the premise that designing shopping streets should allow for the particular street to function as more than just a shopping street. Therefore, a variety of static activities would need to be encouraged.

## **b) On Secondary Streets**

Earlier, the sociability levels of secondary streets were found to be high (see table 5.10). However, their accessibility levels were low. They even showed negative



correlations between the distribution of NOR on SE and BE in them and their  $r_3$  values (see table 5.11).

Generally, secondary streets cater for a medium distribution of people's movement. Interestingly, however, the findings showed that the streets successfully accommodated people's static activities. Would this indicate that secondary streets are highly sociable but poorly accessible for static activities? Perhaps the answer is not necessarily so. Table 6.1 shows that both N and R activities were highly recorded, whilst O activity was moderate on secondary streets. Good dispersions of static activities on the three physical designs were recorded on Margaret Street, Great Marlborough Street, and Berwick Street. These streets showed better levels of sociability than other secondary streets in the area (see table 5.10 in chapter 5). This is quite apparent. Many activities, such as people smoking cigarettes at building entrances, were observed on Great Marlborough Street (see map BE), where the existence of entrances conducive to static activities might have influenced the high distribution of N activity. It is clear that though the street sustains a moderate level of people's movement, it is not a moderate distributor of people's static activities (see figure 5.14 b).

### **c) On Tertiary Streets**

A very high sociability of tertiary streets was found in previous analysis in table 5.10 (chapter 5), especially in the distribution of NOR on SE and BE in relation to the total of NOR in the area (see table 5.10). Tertiary street accessibility was also high and high correlations were found in the distribution of NOR on SE and LE in relation to their  $r_3$  (see table 5.11).

Table 6.1 shows that a consistent presence of all types of static activities exists on tertiary streets. It seems that amongst the other two types of streets, the distributions of NOR on the SE, BE and LE on tertiary streets correlated strongly with the total NOR. The correlation values are particularly high on Kingly Street, Brewer Street and Broadwick Street.

It is understood that tertiary streets distribute a low level of people's movement. However, very interestingly, despite sustaining a low movement of people, these

streets were highly occupied by static activities. Seemingly, such a small movement has made the streets more conducive to static activities. Perhaps also, these side streets are more pleasant as places to be in as they are not full of traffic. Even though the distribution of NOR on tertiary streets was not as consistent as it could be, overall at least, this distribution was much more consistent than on primary and secondary streets.

This section has highlighted the inconsistent sociability and accessibility of primary streets in the area. However, the sociability and accessibility of secondary and tertiary streets were otherwise. The next section analyses the proportion of sociable and accessible streets in relation to their hierarchies.

### **6.1.3. Highlights of the Chi-square Analysis**

Section 5.6 in chapter 5 presented the results of a chi-square analysis of the distribution of static activities in relation to the local integration value of the studied eighteen streets. The section is a final analysis of the social, socio-physical and syntactic variables, and aims to provide a holistic analytical framework of the sociability and accessibility of streets. The analysis helps to investigate the problem of achieving a balance between the sociability and accessibility of the streets.

The chi-square analysis investigated the statistically significant differences between the high and low integration values of the primary, secondary, and tertiary streets relative to their sociability levels. This is based on the following;

- a) analysing the appropriate number of primary, secondary and tertiary streets to balance their sociability and accessibility in accommodating and distributing static activities.
- b) analysing the 'expected' quantity of streets, which need to be re-evaluated for their low distribution of static activities.

The above analyses found a significant difference between the proportions of streets with high sociability, with a less than one in twenty chance that these differences arose accidentally. This confirms that there was an imbalanced use of streets for static and

dynamic activities in the studied area. In order to arrive at their equal distribution, streets with high integration values which distribute high movements of people would need to be re-evaluated for their uses for static activities. Such uses can be achieved by providing adequate socio-physical variables.

## **6.2. KEY PARADOX**

The analysis of the sociability and accessibility of the streets arose as the key paradox of the thesis. It derives (in particular) from the negative values of the correlation analysis of the accessibility of the primary and secondary streets (see table 5.11 in chapter 5). The correlation analyses have shown the strengths and weaknesses of social, socio-physical, and syntactic variables in accommodating and distributing static activities in streets. They subsequently raise questions of concerning the way to estimate and predict street sociability.

Section 6.2.1 discusses the practical aspects of the above paradox, and section 6.2.2 discusses in more detail the process of estimating and predicting the sociability of streets.

### **6.2.1. Strengths and Weaknesses of Social, Socio-physical, and Syntactical Variables in Static Activities**

Earlier, the correlation between Resultant activity and the total occupation of static activities was found stronger than the Optional activity. The paradox contradicts Gehl (1975), who claimed that R activity exists depending on whether O and N are given better conditions to appear. Thus, it is first assumed that R activity would be present regardless of whether N or O activity existed. R activity could appear by having been influenced by other components of the street. It suggests that some types of static activities might not only be influenced by people but may simply exist when the physical designs in streets permit.

The paradox above leads the thesis to focus on the sociability levels of streets. The strength of the relationship between the distribution of NOR on LE shows the strongest correlation to the total of NOR, whereas the SE and BE are relatively strong (see table 5.6 in chapter 5).

However, when the above correlations are analysed according to the types of street for their sociability and accessibility, only tertiary streets showed good levels (see table 5.10 and 5.11 in chapter 5). Here, the negative correlation which was obtained between the distribution of NOR on LE with the  $r_3$  of the primary streets is particularly noted. Such a correlation shows that streets with a high movement activity do not always guarantee that a high level of pedestrian static activity will also take place on them. Perhaps the local characteristics of these individual streets have not been efficiently used for static activities. In theory, they might not have been properly used for realising the 'interaction' between people and the environment.

The particular negative correlations found between the variables in the accessibility of the streets above could imply that the space syntax calculation on the physical value of the space 'excludes' or 'marginalises' the other possible values of the physical variables, which could stimulate the presence of people who are not dynamic (walking) in streets. Seemingly, space syntax scientific reference to this pattern of pedestrian static activities has been insignificantly expressed as 'co-presence' or 'encounters' which are embedded within the global spatial configuration of urban space. The results above suggest that the marginality of the local aspects, comprising the social and physical components of the individual streets, is 'significant'. They need to be included in any calculation of the physical value of the space. It implies the theoretical function of the environment in providing the 'social settings' in streets, within which interaction between people and between people and the environment can be physically evaluated.

It is clear that the strength of the relationships between the key variables and the sociability or accessibility of the street relates to their dependency on each other's presence. The significant relationships of the key variables in influencing the sociability of the street are as follows;

- a) the inability of N, O or R activities to influence one another or influence the presence of static activities.
- b) the invariability of SE, BE, LE to influence static activities in the configuration of the sociability and accessibility of the streets.

After realising the strength, i.e the degree of influence of the social and socio-physical variables on the distribution of static activities in streets, the next step is to assess whether there is a need to increase or decrease the use of the particular streets for static activities. Would it then be possible to 'predict' the occupancy of static activities for the configuration of the sociability of streets via these two variables? Would this prediction be valid in the local distribution of the occupancy of static activities in the streets? These questions are discussed in the following section.

### **6.2.2. Estimating and Predicting the Sociability of Streets**

It is important to approximate how these static street activities could be generated. In order to make this approximation, these questions are asked: could a certain distribution of a type of static activity be used to predict the occurrence of other types of static activity? Would a high distribution of a particular type of static activity, N, O or R, increase the sociability of the street?

The above were first answered by evaluating the local pattern of the distribution of static activities in (the) individual streets. This was done by calculating the degree of influence of each type of static activity on each type of physical design (see table 5.8 and figures 5.11.a,b, and c) and the distribution of NOR on each type of the physical designs to the total of NOR in the area (see table 5.6 and figure 5.12.a,b,c). These analyses found that a specific type of static activity and physical design could be more influential than others in the total distribution of static activities, hence increasing or decreasing the sociability condition of the streets.

Section 4.4 in chapter 4 explained how to calculate the percentage of uses of each of the variables comprising the  $r$  and  $r^2$  values of the relationship and the variation of degree of influence of these elements on the total of static activities in the area. The degree of influence was calculated through the regression analysis, where the value of the correlation coefficient  $r^2$  was given from which the percentage of uses of these variables was calculated. Ultimately, this degree of influence determines the variation in the occupancy of a particular variable in relation to the variation in occupancy of another variable (Hinton 1995).

For example, consider the variation of the percentages of a type of static activity (say N, O or R) to a particular type of physical design (either an SE, a BE or an LE), on particular primary, secondary or tertiary streets. As demonstrated in table 5.9 in chapter 5, N activity on the primary streets was highly correlated with the total NOR in the area. There seems to be a need to know now whether a certain percentage (%) of N activity exists in accordance with a certain percentage (%) of the physical design that is available on these primary streets. The  $r$  value of N activity on these primary streets is given as 0.880, and the following regression graph in figure 5.13.a gives the  $r^2 = 0.880 \times 0.880 = 0.775$ . This means that the variation of 76% of N activity has influenced the distribution of static activities on the primary streets in the area.

The different levels of uses of the physical design have been recorded on some streets, which were observed within the same day and at the same time. Additionally, some repeated types of static activity have also been observed on some particular types of physical designs. The types of activity in the N activity category (browsing, waiting, map reading, smoking, using one's mobile) that are high in distribution could be identified from snapshot maps of the area (see map N activity). For example, browsing at window-displays was highly present in the primary streets in this area. A correlation analysis is adopted between each type of static activity and the types of physical designs on specific streets. This evaluates whether this N activity is highly present on the particular physical design (the pavement-edges, building facades, entrances, etc). It is found that on the primary street, the LE demonstrated a high usage. This can be associated with the high use of N activity on these primary streets as earlier presented in section 6.1.2a. The correlation values between the distribution of NOR on LE on the primary street and the total of NOR are given,  $r = 0.959$  and  $r^2 = 0.921$  (see section 5.10 in chapter 5). This shows that 92% of the total static activities in the area is a variation of the degree of influence of the existence of the distribution of NOR on LE on primary streets. There is, possibly, an association between the existences of these land-uses on these primary streets with the N activity. Some examples could refer to the observation made on New Bond Street and Regent Street III/IV (see map N activity). This could also imply that a high distribution of N activity on these primary streets was not necessarily solely due to the high spatial connectivity of these streets to their network in the area, but also to their socio-physical elements.



Though these static activities could influence each other's presence in streets to a greater or lesser degree, the above analysis is significant, and would need to be conducted first, before studying the macro pattern of distribution of the sociability of a particular local condition of streets within the global context of a certain area.

### **6.3. SUMMARY**

This chapter has demonstrated and combined the empirical and theoretical evidence to explain the 'how', 'why' and 'what' of the presence of static activities in streets. These might be related to the distribution of the types of activities and the type of physical design that supports them, and are sometimes related (caused or influenced by) to the value of space, i.e the connectivity of the streets to other streets in the local and global network of streets.

Section 6.1.1 analysed the micro aspects of the distributions of N, O or R activities on the primary, secondary and tertiary streets. The results in table 6.1 showed that the different distributions of each type of static activity could be randomly recorded as high or low on the different types of streets. Two primary streets with high movements of people can both record high or low distributions of each type of static activity. Similarly, two secondary and tertiary streets, can also record both high and low distributions of each type of static activity. Thus, it is argued that these high and low distributions of each type of static activity can both be related or not related to the hierarchical level of the streets.

Some streets demonstrate higher distributions of static activities than others; some streets attract higher distributions of N activity than others. Some streets attract higher O than R activity; and some streets attract more R than O or N activity. Such analyses in evaluating the empirical manifestation of these social variables on streets have enabled an understanding of the way pedestrian static activity establishes its 'function of uses' on streets.

# CHAPTER 7

## Conclusion

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*'I am not, heaven forefend, going on to argue for places of maximum gregariousness, social directors for plazas. Anomie would be preferable. What I'm suggesting, simply, is that we make places friendlier. We know how. In both the design and management of spaces, there are many ways to make it much easier for people to mingle and meet. It would be no bad idea to move more in this direction'*  
(Whyte 1980, p. 98)

*People should not be forced to withdraw from the streets because of the discomforts caused by traffic.*  
(Appleyard 1988, p. 303)

Both Whyte and Appleyard imply that the challenge imposed by the growth of traffic should not be the reason that hinders urban designers to keep pursuing effective techniques in bringing back the social life in streets. This thesis has investigated the problems incurred in the process of designing, prioritising and making urban streets lively for people. Throughout, the thesis has demonstrated that these problems predominantly exist due to limited examination and a lack of understanding of the intricate uses of streets by pedestrians' static activities. Consequently, the thesis argued and demonstrated that urban design practice has failed to adequately address the following:

i. Static activities could provide insights into perceiving intangible aspects of interactions in streets. Static activities are evident in a variety of aspects: their social (effect on people), socio-physical (effect on physical designs) and spatial (effect on the connectivity of the individual street within the local and global network of streets). The social, socio-physical and spatial effects of static activities on how people use streets provoke their theoretical and empirical synthesis into the processes of interactions between people and between people and the physical environment. These interactions

occur directly and indirectly in the way people communicate verbally and non-verbally with one another and communicate non-verbally with the environment. Such communications manifest focused and unfocused interactions in static activities released in the sociological and psychological behaviour of people.

ii. Static activities are empirical (objective) evidence, which could influence the design of socially and spatially functional streets; hence the street's sociability and accessibility for people. Static activities can be observed and measured objectively. They can be used objectively as social variables, which are related to the socio-physical and spatial variables of the street. Their empirical aspects would allow a quantitative evaluation of the interrelation of the variables in the street's sociability and accessibility.

iii. Static activities are a predominant social variable in balancing the sociability and accessibility of streets. This uncovers the potential of the synthesis of the above variables in producing a theoretical and operational framework, which could be used as an analytical model for measuring the balance of use of the street for static and dynamic activities. Such a framework would be essential for making the street lively, and give priority to people.

At its core, this concluding chapter reflects the above arguments. It focuses on the need for urban design practice to adopt the proposed framework for designing lively streets for people. The chapter is divided into the following sections. Section 7.1 discusses the significant outcomes of the thesis. These outcomes are drawn from the key approach taken to the problem of the limitation of the use of urban streets by people and their static activities. The section emphasises the evidence of static activities in the everyday activities of people, in the physical designs and in the local and global configuration of the street in the urban space. Section 7.2 summarises the analyses of these three main variables drawn from across the thesis as a whole. It reflects the synthesis and objective of the thesis. It discusses the quality and criteria derived from these contributing variables to street sociability and accessibility. Section 7.3 discusses the applicability of the methodology. It explains the theoretical and practical key techniques adopted for designing the sociability and accessibility of the streets. It gives the quantitative evaluation used for achieving a balance between these functions of the street (refer to chapters 4, 5, and 6). Section 7.4 concludes the discussions of the chapter.

## 7.1. KEY THESIS OUTCOMES

The academic literature in chapter 2 prompted a definition of the problem investigated in this thesis. The thesis argues that urban streets have been insufficiently used by pedestrians' static activities, which provide a key to the ongoing challenge of designing and giving people priority in streets. Chapter 2 began to investigate static activities within the broad range of traditional urban design interpretations in order to understand how urban society uses streets socially. It revealed that urban designers' broad interpretation and lack of conception of people, like that of psychologists and sociologists, have led to their consistently being criticised in their approaches to bringing life to city streets. The downside of their approaches is revealed through their conventions in integrating the general use of urban spaces with that of specific human uses of streets (Southworth and Benarjee 1997). The general use of urban space inherently includes the use of all aspects of areas such as roads, squares, and plazas in cities, whilst an understanding of the sociological and psychological behavioural of people is required for their specific usages and needs on streets. It is further noted that people's intricate behaviour in their interactions and communications has been insufficiently integrated into (many) urban street design solutions. Without detailed empirical observation, and an understanding of human actions, it is not easy to distinguish between the two different uses and needs in the larger context of urban space and those specifically on streets.

Seeking to understand people's specific pattern of use format the basis for exploring how urban designers comprehend and design lively urban streets. Though there is evidence that some urban design approaches both theoretical and practical, link social, socio-physical, and spatial factors to the design of streets, they were often implemented in a limited way. The important implication of static activities in enriching the cultural, business, social, psychological and sociological diversities is that they create more lively streets for urban populations. Much of these possibilities for enriching the social life of urban streets were still buried in strict planning controls, privatisation of the public realm and domineering traffic use of streets; those conflicts increased in parallel with the growth of cities (Minton 2006).

Chapter 3 continued to explain the function of streets in the everyday life of contemporary urban society. It expanded the theories of how people's static behaviour

could affect the uses of urban streets. It elaborated in detail the process for developing a theoretical and objective framework which would create sociable and accessible streets with the incorporation of static activities.

To operate the framework, the thesis reviewed how urban design practice evaluates people's activities in streets. Much evidence was given suggesting that the people-based approach needs to be developed further and given more emphasis, specifically in streets designed for people (Institute of Engineering 2002). Throughout, the thesis emphasised the theoretical and practical inputs of social, socio-physical, and spatial implications of static activities in streets.

#### **7.1.1. People and Static Activities**

The thesis re-emphasised the practical implications of static activities such as the *Necessary*, *Optional* and *Resultant*, which were expanded from the work of Jan Gehl (1975) (see chapter 2). The thesis considered static activities as the predominant urban activities that have an impact on the physical designs and spatial aspects of streets. The analysis of the relationship between static activities and the physical designs and spatial aspects of streets contributes to the configuration of street sociability and accessibility.

#### **7.1.2. Physical Designs and Static Activities**

Theoretically, Jan Gehl (1975) addresses the physical designs and the physical locations on the street as 'places' for staying against the provision of the street as a space for the walking pedestrian. Rapoport (1990) refers to such locations as 'static pedestrian spaces', which would encourage static activities. Whyte (1980) regards these locations as sitting spaces as found in streets, public squares or plazas. Sociologically, Goffman (1959) metaphorically addresses the physical location as the 'stage of performance' or the 'behavioural setting' wherein focussed and unfocussed interactions occur between people. The theoretical view of Lawson (2001) refers to these behavioural settings as the 'platform of communication' manifesting non-verbal communication between people and the environment. These settings account for formal and informal static activities.

Practically, the thesis identifies the above physical locations as the physical designs which form the 'topography' to attract static activities (Kostof 1976, Anderson et al 1986, Rapoport 1987). These physical designs are categorised as the street element (SE), building element (BE), and landuse element (LE). These aspects of physical designs are envisaged as 'places' and fit the descriptions given by various authors, who say that such places cater for verbal and non-verbal communication between people, and the non-verbal communication between people and the environment. An analysis of the relationship between the occupation of static activities and physical designs provides an evaluation of the street's sociability.

### **7.1.3. Street Configuration and Static Activities**

Theoretically, this thesis applied space syntax methodology in measuring the 'topology' (the 'spatial connectivity', or the 'configuration') of the individual street in relation to other networks of streets within the boundary of the studied area. Practically, this application allowed an assessment of the empirical value of the spatial connectivity of the individual street in influencing the occupation and distribution of static activities within the local and global network of streets in the area.

Focussing on the above interest, the thesis related the local spatial connectivity, the ( $r_3$ ) value, to the occupation of static activities. Such a relation evaluated the spatial function, the accessibility of the particular street within the local network in accommodating and distributing static activities in the area. It especially evaluated the high distribution of the movement of people in primary streets, which are highly-integrated in their network against the concentration of their static activities. The analysis of the relationship between the distribution of static activities on physical designs and the local integration value contributes to the particular street's accessibility.

## **7.2. SOCIABILITY VS ACCESSIBILITY OF STREETS**

The strengths of the relationships between the social, socio-physical and spatial variables to the occupation of static activities were evaluated. This evaluation accounts for the synthesis of the theoretical and practical frameworks of analysis of the interrelation between these variables in the street's liveliness.



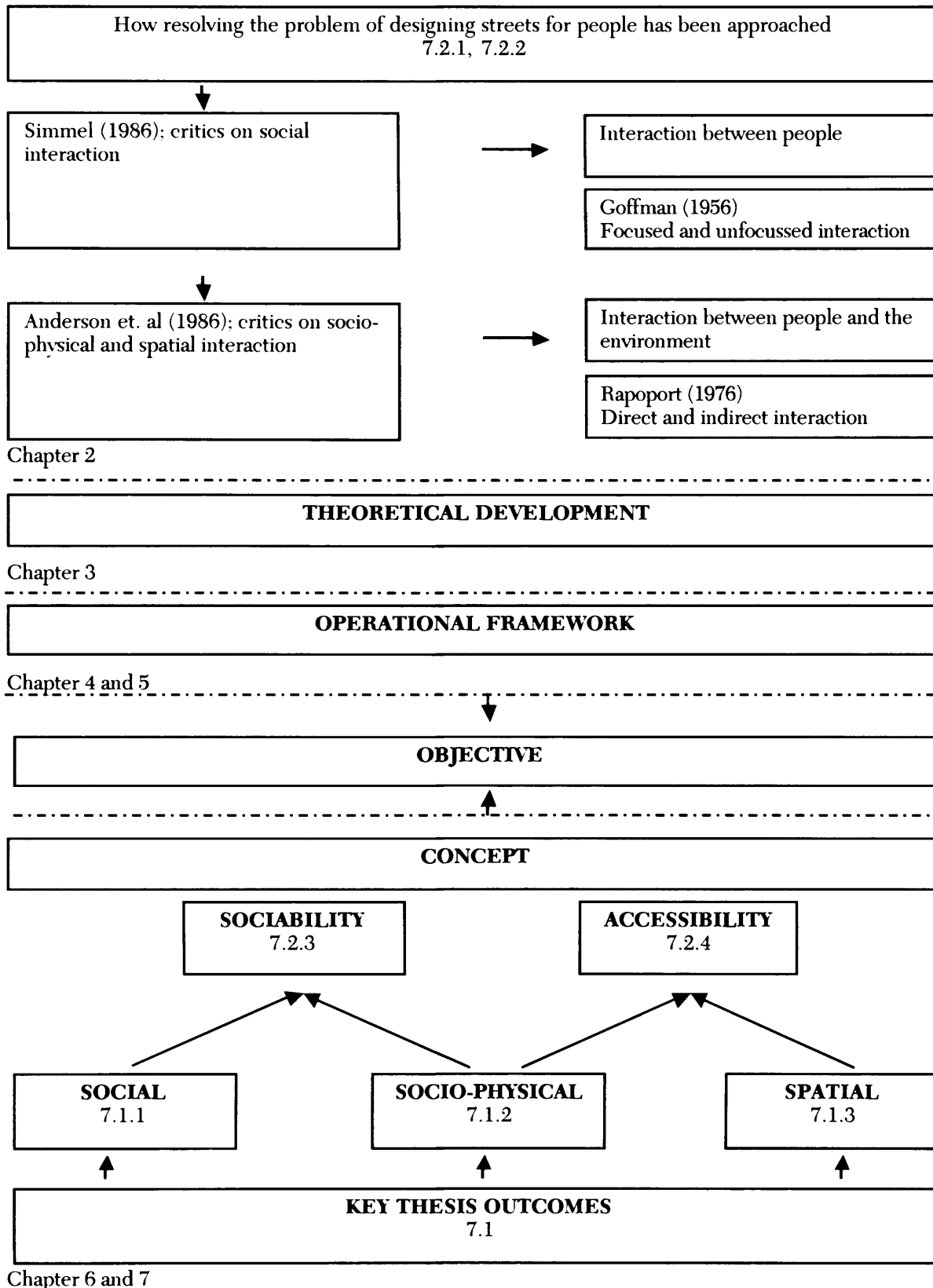


Figure 7.1 Thesis outcome

## 7.2.1 Understanding People and Interaction in Streets

This section presents the synthesis of the framework. It reflects the main objective of the investigation relating to how people have been accommodated in streets. The section elaborates the approaches to and the qualities and criteria of the variables outlined in figure 7.1.

Originating from Simmel (1896), some contemporary sociological debates asked how the loss of social interaction could be investigated within the context of how urban people use streets in their daily lives (Goffman 1956, Bennet and Watson 2002, Douglas 1974). Their studies show that people are to be treated as objects in order to understand them scientifically. With regard to that, the thesis argues that a sociological conception of people has been much missing in urban design.

Goffman's (1956) '*Sociology Of Everyday Life*' paves the way. Goffman understands people and their activities sociologically as well as psychologically. The thesis adopts a scientific aspect by observing people as objects in their static activities. It relates the theoretical implication of static activities to people's sociological and psychological behaviour inherently embedded in their verbal and non-verbal communication (Argyle 1959). When people communicate verbal and non-verbally with one another, they project interaction. The way they project interaction directly or indirectly is evident in behaviours such as chatting, gazing, waiting and sitting (see chapter 2 on *Static Activities in Streets*). Goffman claims that when people talk, they project direct or 'focused' interaction. When people gaze as they non-verbally communicate with one another, they project indirect or 'unfocused' interaction.

Such behaviours in people's stationary actions could affect their densities, leading to the formation of proxemics and crowds, which can attract people into or repel them from the street (Sommer 1969, Stokols 1976). In relating Goffman's notion of interaction to the proposed analytical framework, the thesis incorporates people's sociological and psychological behaviour in the architectural and urban design approaches to streets for people (Whyte 1980, Anderson et. al 1986, Moudon et. al 1987). In realising interaction architecturally, the theoretical framework especially adopts the position of Anderson (1986), who claims that urban design practice has understood the nature of interaction in only a limited way and thus has often failed in its attempts to design streets as 'places of interaction'.

Consequently, Goffman's notion of 'focused and unfocused interaction' between people is extended in formulating the theoretical and practical (objective) development of the social, socio-physical, and spatial relations of static activities. The social relation between people addresses their interaction with each other. The socio-physical and spatial are related to the way in which people interact with the environment. These theoretical relations are then empirically evaluated in street sociability and accessibility.

### **7.2.2. Redesigning Street Liveliness**

The above relations of static activities reveal the theoretical and practical aspects of interaction. People's static activities carry within them the intangibility of interaction, which can then be perceived and understood objectively. They can be practically integrated in the sociability and accessibility of streets. The framework reveals people sociologically in their focused and unfocused interaction between themselves and to the environment. The practical aspect of the synthesis objectively incorporates static activities within the practical function of the street. Static activities are envisaged as a system of activities structuring the local and global networks of streets.

Such an approach addresses the particular role of streets as public realms in the modern urban environment. More realistically, the framework conceptualises a street according to how it should be considered in its nature and physiology - as an individual street and a network (Moudon et. al 1987).

The framework projects a holistic way of rethinking how lively urban streets could be designed. Synthesising the sociability and accessibility inherently addresses the innate dialectic aspects of uses of the street. It provides an understanding of how a balanced use of the street for people's static and dynamic activities can be achieved.

### **7.2.3. Static Activities in Street Sociability**

Some urban design approaches incorporate static activities in promoting the sociability of streets (Gehl 1975, Whyte 1980). However, static activities are often included in only a limited way due to the need to satisfy changing urban social activities and the diverse functions of streets. This has caused constant conflicts in the demands on street use (Appleyard 1987).

The thesis defines sociability. It develops a framework for analysing the sociability of streets in which the social relations in people's interaction are accommodated. In this way, the manner in which people communicate with one another through their static activities is revealed. The social relations in sociability are assessed according to the potential of static activities to reveal sociological and psychological behaviour that would either encourage or discourage people in streets. Such potentials are noted within the context of a crowd. For instance, when people are drawn to a crowd, the crowd acts as a 'design stimulant' and establishes social influence amongst people. When people are drawn away from it, the crowd is said to act as a 'non-design stimulant' and leads to people setting boundaries of personal space in terms of 'proxemics'.

Practically, sociability accommodates the above relation. The physical locations on which static activities are located are assessed. Assessing sociability in this manner reveals variation in the types of static activities, which are highly present and affected by the availability of certain physical locations.

The thesis additionally notes that sociability needs to be assessed and distributed simultaneously within its larger global network. Streets should not be restrictively designed only within their individual local environment. A larger distribution of static activities should be considered when people form a crowd, which impinges on movement (Whyte 1988). A balance of use is therefore needed between the static and dynamic movement of people in streets.

#### **7.2.4. Static Activities in Street Accessibility**

The above suggests an integration between the sociability and accessibility of the street. Practically, such an integration simultaneously accommodates and distributes static activities. It could be achieved by analysing the potential of physical locations to accommodate and the connectivity of the streets to distribute static activities within their network. Theoretically, it promotes the socio-physical and spatial relations of non-verbal communication between people and the environment. This approach is different from the generic design convention of accessibility (Elkington et. al 1976).

Influenced by transport design, most measures of accessibility are directed to the ease of people walking and in cars. As a result, urban design measures of accessibility relate

the socio-physical and spatial aspects of accessibility to the walking conditions of pedestrians and their mobility in cities. The former is concerned with widening pavements, whilst the latter provides new town centres where people are better able to move around within the local and global context of the city (Bentley et. al 1997). Static activities are insufficiently integrated within these measures. The measures insufficiently promote people's sociological and psychological needs. Sociologists have argued that highly dense areas (which can include streets) can cause 'urban stress', which lead to the formation of wide personal boundaries. Lack of knowledge about such behaviour has often led urban designers to ignore the implicit cause, which has created streets that are very dense with movement but low on static activities. The particular drawback constantly hinders the urban design process from successfully integrating social interaction in street accessibility.

### **7.3. CONCLUDING DISCUSSION**

Appleyard (1980), in his book *Livable Streets* argued that *"to examine the impact of traffic on street life, we needed a theoretical model to relate in some structured way all the variables that might take part in the complicated interaction between traffic and residents"* (p.29).

In response to Appleyard, it is hoped that the technique of analysis developed for the thesis considers the impacts of the variables relevant to producing streets for people and provides a useful method for urban design practice to understand the loss of street life in contemporary urban areas.

Fundamentally, the thesis argues that urban design measures have insufficiently addressed the empirical significance of static activities, and therefore have been unable to produce a scientific analytical framework for designing lively streets.

#### **7.3.1. Interpretations and Implications**

The interpretation of the results of the previously discussed analyses aims to emphasise the accuracy of a detailed empirical evaluation of the framework, which is thus able to challenge other studies on static activities.

The thesis challenges Jan Gehl's (1975) observation on static activities (see table 6.1 in chapter 6). Gehl considers R activity as social, which thus stimulates interaction between people. According to Gehl, R activity rises substantially when there is an increasing frequency of N and O activities, which depend on the exterior weather conditions. Instead, the thesis found that the particular distribution of R activity is higher than N and O activities in many primary, secondary, and tertiary streets in the studied area. Such scenarios imply that R activity has not necessarily been influenced by the presence of N and O activities.

The thesis also challenges Hillier et. al's studies on static activities in accordance with the theory of the natural movement of the spatial configuration of urban space. The thesis has found that the distribution of static activities has correlated both positively and negatively with the local integration values of some streets. Other analyses have shown that static activities have occupied some primary streets more than others. In a particular example related to such analyses, Hillier et. al's (1983) space syntax analysis claims that the presence of O activity is strongly influenced by high through-movement in a particular street. However, high O activity was not consistently recorded in primary streets with a particular high through-movement of people. Like the R activity, O seems more present in secondary and tertiary than primary streets.

The above analyses have also resulted in an interesting finding related to some tertiary streets in the area. These streets with low levels of accessibility, which are less occupied by moving pedestrians, have shown significantly high levels of sociability. They therefore challenge the assumption that primary streets with high accessibility sustain a high volume of people's activities. This study indicates that the high volume of people's activities in primary streets is low on static activities, which then exhibited low sociability levels.

The above clearly shows that the highest distribution of a certain type of static activity did not always correspond to the street hierarchy. Instead of a high level of connectivity between a street hierarchy and its network, this study has shown that mixed types of physical design elements more significantly influence the high occupation of static activities. A specific case can be found in table 5.10 of chapter 5 (see section 5.5.3). The table shows that in most primary streets, only the occupation of static activities on LE shows a high correlation with the total NOR in it. Evidently, other physical design



elements in primary streets are less occupied by static activities. However, the correlation value of such a distribution of static activities on LE dropped significantly against the  $r_3$  of primary streets. Furthermore, it acquired a negative correlation value (see table 5.11 in chapter 5). The negative value could suggest that a high distribution of people moving into streets creates congestion or crowds, which then hinders static activities. It could also mean that static activities on LE are not regularly distributed amongst the primary streets in the studied area. Such a case is particularly evident in New Bond Street, which recorded significantly high N activity, which only happened at window displays (see table 5.1, map B, map N activity, and Appendix B.1 for a full tabulation of static activities on New Bond Street). The street shows that the restricted type of physical design elements in it only attract one particular type of static activity.

One outstanding case pertaining to the above is shown in the correlation analysis between the occupation of static activities on the physical designs with the  $r_3$  values of primary and tertiary streets (see section 5.5.3 in chapter 5). Tertiary streets acquired better correlations, were better-used by static activities, and were therefore more sociable than the primary streets. The negative correlation values of primary and secondary streets further proved that a tertiary street with a low-integrated value (segregated space) can accommodate a high occupancy of static activities. In contrast, primary and secondary streets with high and medium integration values (medium and high-integrated spaces) can accommodate a low occupancy of static activities.

The thesis further challenges the above evidence. A chi-square analysis is finally adopted in order to evaluate the proportion of high and low sociable streets against their integration values. The chi-square analysis shows that 1 in every 20 of high-integrated and low-integrated streets, which are highly sociable and poorly sociable, could happen by chance. It shows a significant difference, with a chance of less than one in twenty cases of high integrated and low-integrated streets, analysed according to their hierarchies, demonstrating high sociability occurring by accident (see table 5.14 in chapter 5, Hinton 1999, Rowntree 1981).

The above further challenges the space syntax measure (Hillier's 1992). Hillier's measure argues that a high occupation of an area with people's activities could simultaneously be predicted in streets with high integration values. Hillier considers such a prediction is proven as he claims that the occupation of activities in a certain

space is affected by the global spatial configuration of the urban space. The above result shows that the spatial configuration of the street in its local network has not significantly contributed to the high distribution of static activities in highly sociable streets. It particularly establishes the key paradox, which concludes the investigation that demonstrates a synthesis of a systematic technique in measuring lively urban streets.

It is therefore argued that a balanced use of streets is needed. Highly integrated streets, which are highly accessible for walking pedestrians, as is the particular case of Regent Street, would also need to be highly sociable with static activities. The analyses have demonstrated that the impact of crowd, good and bad design, and the distances people are willing to walk in their occupation of static activities need simultaneous integration. The observation technique defined the current state of a particular street in terms of its advantages and disadvantages for static activities. One important implication is in characterising pedestrian spaces in the diverse hierarchies of streets with their levels of sociability and accessibility. The evidence from the correlation and regression analyses of the sociability and accessibility of primary, secondary and tertiary streets gives a basis for interpreting and arguing the implications of static activities in city streets. It suggests that close empirical examination and observation of the way people behave in static mode will help determine the best use and future design of streets within the urban fabric. Such uses should not be intuitively determined (Whyte 1980).

To date, detailed exploration and application of static activities in the framework of streets for people still pose a challenge to town centre management, landscape, architecture, urban, transport and environmental planning. The thesis has demonstrated an operational technique which empirically measures the probability of the variables influencing static activities in streets. The measures have demonstrated that a primary street that is highly accessible for pedestrian walking is not necessarily highly sociable for people. The technique provides a thorough explanation of the possibility and probability of either increasing or decreasing the sociability and accessibility of primary, secondary and tertiary streets in achieving efficient use by people. It comprehensively explains how a balanced use of streets for static and dynamic activities could be attainable. It has significant implications for policy-making, zoning regulations, geographical analysis, landscape design, planning and transport design processes.

### **7.3.2. Limitations of the Thesis**

Over the years, the pattern of static uses in streets has been changeable depending on how urban society carries out its everyday activities (Fyfe 1998). The recent legislation in England and Wales, that bans smoking in enclosed public spaces has certainly added a new dimension to the formation and concentration of static activities. Overnight, the street dynamic seems to have changed, and overcrowded pavements and noise on urban streets have been direct consequences (<http://www.news.bbc.co.uk/1/hi/magazine/6259742.stm>, <http://www.nosmokinglaw.co.uk>).

Static uses are clearly still a subject for further investigation. They open the field of interaction, which in itself is vastly subjective in the day-to-day life of the urban population to analysis. However, analysis has opened up an avenue of integration between the process of designing streets for static activities and significant variables, which are related to the social, sociological, economic, political, land-use conditions, criminal and many other possibilities of bringing human character to streets.

Such character indirectly reflects the broad span of 'interaction' in the environment. Nonetheless, even though the style in which people interact may change in the present globalisation era through technology, where non-verbal communication via computer and television is taking place, human action prevails. People will always predominantly make demands through their physical presence. Only through face-to-face interaction, which has been ignored in city culture, will people communicate, though perhaps non-verbally, and create a new 'communicative' experience in urban environments (see chapter 2). Thus, human experience, action and interaction consistently pose a new challenge to designers.

### **7.3.3. Future research**

Evidently, a new theme in the design of city culture is needed. A future undertaking in the spatial design of human experience through its diverse activities structuring city streets could still beneficially be developed.

Despite its intangibility, integrating interaction into design is not impossible. The developed framework of a synthesis of variables and techniques can provide the key to

design measures that give priority to human experience in streets. Such a technique of synthesis would develop a practical and logical model for an urban analysis and would be useful for predicting future urban activities.

The synthesis might also need to consider other variables in the process of evaluating the liveliness of streets through sociability and accessibility measures. Diverging from the transport convention, it is hoped that the thesis has demonstrated an alternative, where other, more subtle activities – can become potential variables to be given priority.

Despite its limitations, it is hoped that the model will shed light on future effects on economic development, changes in retail landuse structure, zoning regulations and policies with regard to urban redevelopment programs and analysis of people in streets. At least, it is hoped that analysing the balance of the use of streets by static activities has raised some important issues regarding transport, urban design, architecture and planning approaches in ensuring streets successfully function for people. Would the implementation of the design of streets in this way also be socially sustainable? Such a question is still subject to examination and open to further research.

The thesis has explored the way in which the theoretical and practical significance of static activities could be applied to make lively urban streets. The thesis concludes that synthesising the social, socio-physical, and spatial factors would lead to a balanced use of streets for static and dynamic activities. People can be empirically observed and give insights into how interaction could be perceived in their everyday life in streets. Such an understanding could then be theoretically and practically developed, modelling themes in contemporary urban design research and practice.

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APPENDIX A – WINNING ENTRY FOR POSTER COMPETITION IN SPACE SYNTAX 4<sup>TH</sup> INTERNATIONAL SYMPOSIUM 2003, LONDON



**APPENDIX B – TABLE O (Observation table)**

Table O – This table is used in the 'snap shot' observation of static activities. Static activities are tabulated in accordance with their categories Necessary (N), Optional (O), and Resultant (R). The observations of these activities are tabulated according to their presence on the physical locations, termed as the physical designs, in the street. The three categories of the physical designs are Street Element (SE), Building Element (BE) and Land use Element (LE).

Main Category of Physical Designs	Detailed Category of Physical Designs	Detailed Physical Location of Static Activity	STATIC ACTIVITIES											Sub Total	GRAND TOTAL	
			Necessary (N)					Optional (O)			Resultant (R)					
			browse	wait	map	cigarette	mobile	eat drink	read	picture	talk	watch	vendor			
Street Element (SE)	Pavement Edges	• street edges														
		• street barriers														
		• street fences														
		• street walls														
		Sub T/P.E														
	End of Streets	• intersections														
		• junctions														
		Sub T/E.S														
	Public Facilities	• lamp posts														
		• bins														
• post boxes																
• phone booths																
	Sub T/P.F															
TOTAL SE																
Building Element (BE)	Building Facades	• indents of buildings														
		• ledges and sills														
		• sitting walls/ plinths														
		• flower boxes														
		• pillar bases														
		• basement fences														
		Sub T/B.F														
Public Private	• entrance steps															
	• vestibules/porches															
	Sub T/P.P															
TOTAL BE																
Land use Element (LE)	Window Displays	• shops, office, saloon														
		Sub T/W.D														
	News Agents	• quick shop														
		Sub T/N.A														
	Cash Points	• bank														
		Sub T/C.P														
	Eatery Places	• cafes, restaurants, pubs, fast food														
Sub T/E.P																
TOTAL LE																
GRAND TOTAL																



APPENDIX B.1 – Data on pedestrian static activity

Parcel	Street	Day	Time	Main Category of Static Activity	Static Activity	Main Category of Physical Design	Detailed Category of Physical Designs	Landuse	Detailed Physical Location of Static Activity	Axial value
A	Regent Street I/II	Thursday	0930-1130	R	watch	LE	window display	retail	travel shop	4.159
A	Regent Street I/II	Thursday	0930-1130	R	talk	LE	window display	retail	travel shop	4.159
A	Regent Street I/II	Thursday	0930-1130	R	talk	LE	window display	retail	travel shop	4.159
A	Regent Street I/II	Thursday	0930-1130	R	talk	LE	window display	retail	travel shop	4.159
A	Regent Street I/II	Thursday	0930-1130	N	cigar	LE	eatery place	catering	sandwich shop	4.159
A	Regent Street I/II	Thursday	0930-1130	N	browse	LE	eatery place	catering	cafe	4.159
A	Regent Street I/II	Thursday	0930-1130	N	browse	LE	eatery place	catering	cafe	4.159
A	Regent Street I/II	Thursday	0930-1130	R	watch	LE	eatery place	catering	cafe	4.159
A	Regent Street I/II	Thursday	0930-1130	N	browse	LE	eatery place	catering	cafe	4.159
A	Regent Street I/II	Thursday	0930-1130	N	cigar	LE	eatery place	catering	cafe	4.159
A	Regent Street I/II	Thursday	0930-1130	N	mobile	LE	eatery place	catering	cafe	4.159
A	Regent Street I/II	Thursday	0930-1130	N	mobile	SE	public facility	transport	post box	4.159
A	Regent Street I/II	Thursday	0930-1130	N	cigar	BE	building facade	catering	building indent	4.159
A	Regent Street I/II	Thursday	0930-1130	N	wait	BE	building facade	catering	building indent	4.159
A	Regent Street I/II	Thursday	0930-1130	R	talk	LE	eatery place	catering	cafe	4.159
A	Regent Street I/II	Thursday	0930-1130	R	talk	LE	eatery place	catering	cafe	4.159
A	Regent Street I/II	Thursday	0930-1130	R	talk	LE	window display	retail	shop	4.159
A	Regent Street I/II	Thursday	0930-1130	R	talk	LE	window display	retail	shop	4.159
A	Regent Street I/II	Thursday	0930-1130	N	browse	LE	window display	retail	shop	4.159
A	Regent Street I/II	Thursday	0930-1130	N	browse	LE	window display	retail	shop	4.159
A	Regent Street I/II	Thursday	0930-1130	R	talk	SE	pavement edge	transport	edge of street	4.159
A	Regent Street I/II	Thursday	0930-1130	R	talk	SE	pavement edge	transport	edge of street	4.159
A	Regent Street I/II	Thursday	0930-1130	N	wait	SE	pavement edge	transport	edge of street	4.159
A	Regent Street I/II	Thursday	0930-1130	N	wait	SE	pavement edge	transport	edge of street	4.159
A	Regent Street I/II	Thursday	0930-1130	R	talk	LE	window display	transport	shop	4.159
A	Regent Street I/II	Thursday	0930-1130	R	talk	LE	window display	transport	shop	4.159
A	Regent Street I/II	Thursday	0930-1130	R	vendor	SE	pavement edge	transport	edge of street	4.159
A	Regent Street I/II	Thursday	0930-1130	N	browse	LE	window display	retail	shop	4.159
A	Regent Street I/II	Thursday	0930-1130	R	talk	SE	public facility	transport	bus stop	4.159
A	Regent Street I/II	Thursday	0930-1130	R	talk	LE	window display	retail	shop	4.159
A	Regent Street I/II	Thursday	0930-1130	R	talk	LE	window display	retail	shop	4.159
A	Regent Street I/II	Thursday	0930-1130	R	watch	LE	window display	retail	shop	4.159
A	Regent Street I/II	Thursday	0930-1130	N	browse	LE	eatery place	catering	sandwich shop	4.159
A	Regent Street I/II	Thursday	0930-1130	N	mobile	SE	pavement edge	transport	edge of street	4.159
A	Regent Street I/II	Thursday	0930-1130	R	watch	SE	pavement edge	transport	edge of street	4.159
A	Regent Street I/II	Thursday	0930-1130	R	talk	SE	pavement edge	transport	edge of street	4.159
A	Regent Street I/II	Thursday	0930-1130	R	talk	SE	pavement edge	transport	edge of street	4.159

A	Regent Street I/II	Thursday	0930-1130	O	read	LE	window display	retail	shop	4.159
A	Regent Street I/II	Thursday	0930-1130	R	talk	BE	building facade	retail	pillar base	4.159
A	Regent Street I/II	Thursday	0930-1130	R	talk	BE	building facade	retail	pillar base	4.159
A	Regent Street I/II	Thursday	0930-1130	R	talk	BE	building facade	retail	pillar base	4.159
A	Regent Street I/II	Thursday	0930-1130	R	talk	BE	building facade	retail	pillar base	4.159
A	Regent Street I/II	Thursday	0930-1130	N	cigar	LE	building facade	retail	pillar base	4.159
A	Regent Street I/II	Thursday	0930-1130	R	watch	LE	window display	retail	shop	4.159
A	Regent Street I/II	Thursday	0930-1130	O	drink	SE	pavement edge	transport	edge of street	4.159
A	Regent Street I/II	Thursday	0930-1130	N	mobile	LE	window display	retail	shop	4.159
A	Regent Street I/II	Thursday	0930-1130	N	browse	SE	public facility	transport	phone booth	4.159
A	Regent Street I/II	Thursday	1230-1430	R	talk	BE	public/private entrance	retail	entrance	4.159
A	Regent Street I/II	Thursday	1230-1430	R	talk	BE	public/private entrance	retail	entrance	4.159
A	Regent Street I/II	Thursday	1230-1430	O	eat	LE	eatery place	catering	sandwich shop	4.159
A	Regent Street I/II	Thursday	1230-1430	O	eat	LE	eatery place	catering	sandwich shop	4.159
A	Regent Street I/II	Thursday	1230-1430	O	eat	LE	window display	retail	shop	4.159
A	Regent Street I/II	Thursday	1230-1430	O	eat	LE	window display	retail	shop	4.159
A	Regent Street I/II	Thursday	1230-1430	O	eat	LE	window display	retail	shop	4.159
A	Regent Street I/II	Thursday	1230-1430	R	talk	BE	public/private entrance	institution	entrance	4.159
A	Regent Street I/II	Thursday	1230-1430	R	talk	BE	public/private entrance	institution	entrance	4.159
A	Regent Street I/II	Thursday	1230-1430	N	cigar	LE	eatery place	catering	sandwich shop	4.159
A	Regent Street I/II	Thursday	1230-1430	R	talk	LE	eatery place	catering	sandwich shop	4.159
A	Regent Street I/II	Thursday	1230-1430	R	talk	LE	eatery place	catering	sandwich shop	4.159
A	Regent Street I/II	Thursday	1230-1430	R	watch	LE	eatery place	catering	sandwich shop	4.159
A	Regent Street I/II	Thursday	1230-1430	R	watch	LE	eatery place	catering	sandwich shop	4.159
A	Regent Street I/II	Thursday	1230-1430	N	cigar	SE	pavement edge	transport	edge of street	4.159
A	Regent Street I/II	Thursday	1230-1430	N	cigar	SE	pavement edge	transport	edge of street	4.159
A	Regent Street I/II	Thursday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	4.159
A	Regent Street I/II	Thursday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	4.159
A	Regent Street I/II	Thursday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	4.159
A	Regent Street I/II	Thursday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	4.159
A	Regent Street I/II	Thursday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	4.159
A	Regent Street I/II	Thursday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	4.159
A	Regent Street I/II	Thursday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	4.159
A	Regent Street I/II	Thursday	1230-1430	N	mobile	SE	pavement edge	transport	junction	4.159
A	Regent Street I/II	Thursday	1230-1430	N	browse	LE	window display	retail	shop	4.159
A	Regent Street I/II	Thursday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	4.159
A	Regent Street I/II	Thursday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	4.159
A	Regent Street I/II	Thursday	1230-1430	N	mobile	SE	pavement edge	transport	edge of street	4.159
A	Regent Street I/II	Thursday	1230-1430	N	wait	LE	cash point	service	bank	4.159
A	Regent Street I/II	Thursday	1230-1430	N	wait	LE	cash point	service	bank	4.159







A	Regent Street I/II	Thursday	1730-1930	N	browse	LE	window display	retail	shop	4.159
A	Regent Street I/II	Thursday	1730-1930	O	eat	LE	eatory place	catering	restaurant	4.159
A	Regent Street I/II	Thursday	1730-1930	O	eat	LE	eatory place	catering	restaurant	4.159
A	Regent Street I/II	Thursday	1730-1930	N	wait	SE	pavement edge	transport	edge of street	4.159
A	Regent Street I/II	Thursday	0930-1130	R	watch	LE	window display	retail	travel shop	4.159
A	Regent Street I/II	Thursday	0930-1130	R	talk	LE	window display	retail	travel shop	4.159
A	Regent Street I/II	Thursday	0930-1130	R	talk	LE	window display	retail	travel shop	4.159
A	Regent Street I/II	Thursday	0930-1130	R	talk	LE	window display	retail	travel shop	4.159
A	Regent Street I/II	Thursday	0930-1130	N	cigar	LE	eatory place	catering	sandwich shop	4.159
A	Regent Street I/II	Thursday	0930-1130	N	browse	LE	eatory place	catering	cafe	4.159
A	Regent Street I/II	Thursday	0930-1130	N	browse	LE	eatory place	catering	cafe	4.159
A	Regent Street I/II	Thursday	0930-1130	R	watch	LE	eatory place	catering	cafe	4.159
A	Regent Street I/II	Thursday	0930-1130	N	browse	LE	eatory place	catering	cafe	4.159
A	Regent Street I/II	Thursday	0930-1130	N	cigar	LE	eatory place	catering	cafe	4.159
A	Regent Street I/II	Thursday	0930-1130	N	mobile	LE	eatory place	catering	cafe	4.159
A	Regent Street I/II	Thursday	0930-1130	N	mobile	SE	public facility	transport	post box	4.159
A	Regent Street I/II	Thursday	0930-1130	N	cigar	BE	building facade	catering	building indent	4.159
A	Regent Street I/II	Thursday	0930-1130	N	wait	BE	building facade	catering	building indent	4.159
A	Regent Street I/II	Thursday	0930-1130	R	talk	LE	eatory place	catering	cafe	4.159
A	Regent Street I/II	Thursday	0930-1130	R	talk	LE	eatory place	catering	cafe	4.159
A	Regent Street I/II	Thursday	0930-1130	R	talk	LE	window display	retail	shop	4.159
A	Regent Street I/II	Thursday	0930-1130	R	talk	LE	window display	retail	shop	4.159
A	Regent Street I/II	Thursday	0930-1130	N	browse	LE	window display	retail	shop	4.159
A	Regent Street I/II	Thursday	0930-1130	N	browse	LE	window display	retail	shop	4.159
A	Regent Street I/II	Thursday	0930-1130	R	talk	SE	pavement edge	transport	edge of street	4.159
A	Regent Street I/II	Thursday	0930-1130	R	talk	SE	pavement edge	transport	edge of street	4.159
A	Regent Street I/II	Thursday	0930-1130	N	wait	SE	pavement edge	transport	edge of street	4.159
A	Regent Street I/II	Thursday	0930-1130	N	wait	SE	pavement edge	transport	edge of street	4.159
A	Regent Street I/II	Thursday	0930-1130	R	talk	LE	window display	transport	shop	4.159
A	Regent Street I/II	Thursday	0930-1130	R	talk	LE	window display	transport	shop	4.159
A	Regent Street I/II	Thursday	0930-1130	R	vendor	SE	pavement edge	transport	edge of street	4.159
A	Regent Street I/II	Thursday	0930-1130	N	browse	LE	window display	retail	shop	4.159
A	Regent Street I/II	Thursday	0930-1130	R	talk	SE	public facility	transport	bus stop	4.159
A	Regent Street I/II	Thursday	0930-1130	R	talk	LE	window display	retail	shop	4.159
A	Regent Street I/II	Thursday	0930-1130	R	talk	LE	window display	retail	shop	4.159
A	Regent Street I/II	Thursday	0930-1130	R	watch	LE	window display	retail	shop	4.159
A	Regent Street I/II	Thursday	0930-1130	N	browse	LE	eatory place	catering	sandwich shop	4.159
A	Regent Street I/II	Thursday	0930-1130	N	mobile	SE	pavement edge	transport	edge of street	4.159
A	Regent Street I/II	Thursday	0930-1130	R	watch	SE	pavement edge	transport	edge of street	4.159
A	Regent Street I/II	Thursday	0930-1130	R	talk	SE	pavement edge	transport	edge of street	4.159

A	Regent Street I/II	Thursday	0930-1130	R	talk	SE	pavement edge	transport	edge of street	4.159
A	Regent Street I/II	Thursday	0930-1130	O	read	LE	window display	retail	shop	4.159
A	Regent Street I/II	Thursday	0930-1130	R	talk	BE	building facade	retail	pillar base	4.159
A	Regent Street I/II	Thursday	0930-1130	R	talk	BE	building facade	retail	pillar base	4.159
A	Regent Street I/II	Thursday	0930-1130	R	talk	BE	building facade	retail	pillar base	4.159
A	Regent Street I/II	Thursday	0930-1130	R	talk	BE	building facade	retail	pillar base	4.159
A	Regent Street I/II	Thursday	0930-1130	N	cigar	LE	building facade	retail	pillar base	4.159
A	Regent Street I/II	Thursday	0930-1130	R	watch	LE	window display	retail	shop	4.159
A	Regent Street I/II	Thursday	0930-1130	O	drink	SE	pavement edge	transport	edge of street	4.159
A	Regent Street I/II	Thursday	0930-1130	N	mobile	LE	window display	retail	shop	4.159
A	Regent Street I/II	Thursday	0930-1130	N	browse	SE	public facility	transport	phone booth	4.159
A	Regent Street I/II	Thursday	1230-1430	R	talk	BE	public/private entrance	retail	entrance	4.159
A	Regent Street I/II	Thursday	1230-1430	R	talk	BE	public/private entrance	retail	entrance	4.159
A	Regent Street I/II	Thursday	1230-1430	O	eat	LE	eatery place	catering	sandwich shop	4.159
A	Regent Street I/II	Thursday	1230-1430	O	eat	LE	eatery place	catering	sandwich shop	4.159
A	Regent Street I/II	Thursday	1230-1430	O	eat	LE	window display	retail	shop	4.159
A	Regent Street I/II	Thursday	1230-1430	O	eat	LE	window display	retail	shop	4.159
A	Regent Street I/II	Thursday	1230-1430	O	eat	LE	window display	retail	shop	4.159
A	Regent Street I/II	Thursday	1230-1430	R	talk	BE	public/private entrance	institution	entrance	4.159
A	Regent Street I/II	Thursday	1230-1430	R	talk	BE	public/private entrance	institution	entrance	4.159
A	Regent Street I/II	Thursday	1230-1430	N	cigar	LE	eatery place	catering	sandwich shop	4.159
A	Regent Street I/II	Thursday	1230-1430	R	talk	LE	eatery place	catering	sandwich shop	4.159
A	Regent Street I/II	Thursday	1230-1430	R	talk	LE	eatery place	catering	sandwich shop	4.159
A	Regent Street I/II	Thursday	1230-1430	R	watch	LE	eatery place	catering	sandwich shop	4.159
A	Regent Street I/II	Thursday	1230-1430	R	watch	LE	eatery place	catering	sandwich shop	4.159
A	Regent Street I/II	Thursday	1230-1430	N	cigar	SE	pavement edge	transport	edge of street	4.159
A	Regent Street I/II	Thursday	1230-1430	N	cigar	SE	pavement edge	transport	edge of street	4.159
A	Regent Street I/II	Thursday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	4.159
A	Regent Street I/II	Thursday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	4.159
A	Regent Street I/II	Thursday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	4.159
A	Regent Street I/II	Thursday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	4.159
A	Regent Street I/II	Thursday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	4.159
A	Regent Street I/II	Thursday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	4.159
A	Regent Street I/II	Thursday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	4.159
A	Regent Street I/II	Thursday	1230-1430	N	mobile	SE	pavement edge	transport	junction	4.159
A	Regent Street I/II	Thursday	1230-1430	N	browse	LE	window display	retail	shop	4.159
A	Regent Street I/II	Thursday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	4.159
A	Regent Street I/II	Thursday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	4.159
A	Regent Street I/II	Thursday	1230-1430	N	mobile	SE	pavement edge	transport	edge of street	4.159
A	Regent Street I/II	Thursday	1230-1430	N	wait	LE	cash point	service	bank	4.159



A	Regent Street I/II	Thursday	1230-1430	N	browse	LE	window display	retail	shop	4.159
A	Regent Street I/II	Thursday	1230-1430	N	browse	LE	window display	retail	shop	4.159
A	Regent Street I/II	Thursday	1230-1430	N	browse	LE	window display	retail	shop	4.159
A	Regent Street I/II	Thursday	1230-1430	N	browse	LE	window display	retail	shop	4.159
A	Regent Street I/II	Thursday	1230-1430	N	browse	LE	window display	retail	shop	4.159
A	Regent Street I/II	Thursday	1230-1430	N	browse	LE	window display	retail	shop	4.159
A	Regent Street I/II	Thursday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	4.159
A	Regent Street I/II	Thursday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	4.159
A	Regent Street I/II	Thursday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	4.159
A	Regent Street I/II	Thursday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	4.159
A	Regent Street I/II	Thursday	1230-1430	N	mobile	SE	pavement edge	transport	edge of street	4.159
A	Regent Street I/II	Thursday	1230-1430	R	talk	SE	end of street	transport	junction	4.159
A	Regent Street I/II	Thursday	1230-1430	R	talk	SE	end of street	transport	junction	4.159
A	Regent Street I/II	Thursday	1230-1430	R	talk	SE	end of street	transport	junction	4.159
A	Regent Street I/II	Thursday	1230-1430	R	watch	LE	window display	retail	shop	4.159
A	Regent Street I/II	Thursday	1230-1430	R	watch	LE	window display	retail	shop	4.159
A	Regent Street I/II	Thursday	1230-1430	R	talk	LE	window display	retail	shop	4.159
A	Regent Street I/II	Thursday	1230-1430	R	talk	LE	window display	retail	shop	4.159
A	Regent Street I/II	Thursday	1230-1430	R	talk	LE	window display	retail	shop	4.159
A	Regent Street I/II	Thursday	1230-1430	R	talk	LE	window display	retail	shop	4.159
A	Regent Street I/II	Thursday	1230-1430	R	talk	LE	window display	retail	shop	4.159
A	Regent Street I/II	Thursday	1230-1430	R	talk	LE	window display	retail	shop	4.159
A	Regent Street I/II	Thursday	1230-1430	R	talk	LE	window display	retail	shop	4.159
A	Regent Street I/II	Thursday	1730-1930	N	browse	LE	eatery place	catering	restaurant	4.159
A	Regent Street I/II	Thursday	1730-1930	N	browse	LE	eatery place	catering	restaurant	4.159
A	Regent Street I/II	Thursday	1730-1930	N	browse	LE	eatery place	catering	cafe	4.159
A	Regent Street I/II	Thursday	1730-1930	N	browse	LE	eatery place	catering	cafe	4.159
A	Regent Street I/II	Thursday	1730-1930	N	browse	LE	eatery place	catering	cafe	4.159
A	Regent Street I/II	Thursday	1730-1930	O	drink	LE	eatery place	catering	cafe	4.159
A	Regent Street I/II	Thursday	1730-1930	O	drink	LE	eatery place	catering	cafe	4.159
A	Regent Street I/II	Thursday	1730-1930	O	drink	LE	eatery place	catering	cafe	4.159
A	Regent Street I/II	Thursday	1730-1930	N	browse	LE	window display	retail	shop	4.159
A	Regent Street I/II	Thursday	1730-1930	N	browse	LE	window display	retail	shop	4.159
A	Regent Street I/II	Thursday	1730-1930	N	browse	LE	news agent	retail	shop	4.159
A	Regent Street I/II	Thursday	1730-1930	N	wait	LE	eatery place	catering	restaurant	4.159
A	Regent Street I/II	Thursday	1730-1930	N	wait	LE	eatery place	catering	restaurant	4.159
A	Regent Street I/II	Thursday	1730-1930	N	browse	LE	window display	catering	shop	4.159
A	Regent Street I/II	Thursday	1730-1930	N	wait	SE	public facility	transport	lamp post	4.159
A	Regent Street I/II	Thursday	1730-1930	N	wait	SE	public facility	transport	lamp post	4.159

A	Regent Street I/II	Thursday	1730-1930	N	wait	SE	public facility	transport	lamp post	4.159
A	Regent Street I/II	Thursday	1730-1930	N	browse	LE	window display	retail	shop	4.159
A	Regent Street I/II	Thursday	1730-1930	O	eat	LE	eatery place	catering	restaurant	4.159
A	Regent Street I/II	Thursday	1730-1930	O	eat	LE	eatery place	catering	restaurant	4.159
A	Regent Street I/II	Thursday	1730-1930	N	wait	SE	pavement edge	transport	edge of street	4.159
A	Margaret Street	Thursday	0930-1130	N	browse	LE	window display	retail	department store	3.705
A	Margaret Street	Thursday	0930-1130	N	cigar	LE	window display	retail	department store	3.705
A	Margaret Street	Thursday	0930-1130	N	cigar	LE	window display	retail	department store	3.705
A	Margaret Street	Thursday	0930-1130	R	watch	LE	window display	retail	department store	3.705
A	Margaret Street	Thursday	0930-1130	R	watch	LE	cash point	services	bank	3.705
A	Margaret Street	Thursday	0930-1130	N	cigar	LE	window display	retail	shop	3.705
A	Margaret Street	Thursday	0930-1130	N	wait	LE	cash point	services	bank	3.705
A	Margaret Street	Thursday	0930-1130	N	wait	LE	cash point	services	bank	3.705
A	Margaret Street	Thursday	0930-1130	N	cigar	LE	window display	retail	department store	3.705
A	Margaret Street	Thursday	0930-1130	N	cigar	LE	window display	retail	department store	3.705
A	Margaret Street	Thursday	0930-1130	N	cigar	LE	window display	retail	department store	3.705
A	Margaret Street	Thursday	0930-1130	R	watch	LE	eatery place	catering	pub	3.705
A	Margaret Street	Thursday	0930-1130	N	cigar	BE	building facade	retail	flower box	3.705
A	Margaret Street	Thursday	0930-1130	N	cigar	BE	building facade	retail	flower box	3.705
A	Margaret Street	Thursday	0930-1130	N	cigar	BE	building facade	retail	flower box	3.705
A	Margaret Street	Thursday	0930-1130	R	watch	BE	building facade	retail	pillar base	3.705
A	Margaret Street	Thursday	0930-1130	N	cigar	LE	window display	retail	hair beauty	3.705
A	Margaret Street	Thursday	0930-1130	N	cigar	LE	window display	retail	hair beauty	3.705
A	Margaret Street	Thursday	0930-1130	R	eating	LE	cash point	services	bank	3.705
A	Margaret Street	Thursday	0930-1130	N	cigar	SE	pavement edge	transport	edge of street	3.705
A	Margaret Street	Thursday	0930-1130	N	cigar	SE	pavement edge	transport	edge of street	3.705
A	Margaret Street	Thursday	1230-1430	N	mobile	BE	building facade	indent	deparment store	3.705
A	Margaret Street	Thursday	1230-1430	N	mobile	LE	window display	retail	department store	3.705
A	Margaret Street	Thursday	1230-1430	R	watch	SE	public facility	transport	phone booth	3.705
A	Margaret Street	Thursday	1230-1430	R	talk	LE	window display	retail	department store	3.705
A	Margaret Street	Thursday	1230-1430	R	talk	LE	window display	retail	department store	3.705
A	Margaret Street	Thursday	1230-1430	N	mobile	LE	window display	retail	department store	3.705
A	Margaret Street	Thursday	1230-1430	N	wait	LE	cash point	services	bank	3.705
A	Margaret Street	Thursday	1230-1430	N	wait	LE	cash point	services	bank	3.705
A	Margaret Street	Thursday	1230-1430	N	wait	LE	cash point	services	bank	3.705
A	Margaret Street	Thursday	1230-1430	N	wait	LE	cash point	services	bank	3.705
A	Margaret Street	Thursday	1230-1430	N	wait	LE	cash point	services	bank	3.705
A	Margaret Street	Thursday	1230-1430	N	wait	LE	cash point	services	bank	3.705
A	Margaret Street	Thursday	1230-1430	N	wait	LE	cash point	services	bank	3.705
A	Margaret Street	Thursday	1230-1430	N	wait	LE	cash point	services	bank	3.705
A	Margaret Street	Thursday	1230-1430	N	cigar	BE	building facade	retail	flower box	3.705



A	Margaret Street	Thursday	1230-1430	N	cigar	BE	building facade	retail	flower box	3.705
A	Margaret Street	Thursday	1230-1430	N	wait	SE	public facility	transport	phone booth	3.705
A	Margaret Street	Thursday	1230-1430	R	watch	BE	building facade	retail	flower box	3.705
A	Margaret Street	Thursday	1230-1430	R	talk	BE	building facade	retail	flower box	3.705
A	Margaret Street	Thursday	1230-1430	R	talk	BE	building facade	retail	flower box	3.705
A	Margaret Street	Thursday	1230-1430	N	wait	LE	cash point	services	bank	3.705
A	Margaret Street	Thursday	1230-1430	N	cigar	LE	cash point	services	bank	3.705
A	Margaret Street	Thursday	1230-1430	N	wait	LE	cash point	services	bank	3.705
A	Margaret Street	Thursday	1230-1430	N	wait	LE	cash point	services	bank	3.705
A	Margaret Street	Thursday	1230-1430	N	wait	LE	cash point	services	bank	3.705
A	Margaret Street	Thursday	1230-1430	N	wait	LE	cash point	services	bank	3.705
A	Margaret Street	Thursday	1230-1430	N	wait	LE	cash point	services	bank	3.705
A	Margaret Street	Thursday	1230-1430	N	wait	LE	cash point	services	bank	3.705
A	Margaret Street	Thursday	1230-1430	N	browse	LE	window display	retail	shop	3.705
A	Margaret Street	Thursday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	3.705
A	Margaret Street	Thursday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	3.705
A	Margaret Street	Thursday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	3.705
A	Margaret Street	Thursday	1230-1430	N	wait	SE	pavement edge	transport	edge of street	3.705
A	Margaret Street	Thursday	1230-1430	N	browse	LE	window display	retail	shop	3.705
A	Margaret Street	Thursday	1230-1430	N	mobile	SE	pavement edge	transport	edge of street	3.705
A	Margaret Street	Thursday	1230-1430	N	cigar	SE	pavement edge	transport	edge of street	3.705
A	Margaret Street	Thursday	1230-1430	N	mobile	SE	pavement edge	transport	edge of street	3.705
A	Margaret Street	Thursday	1230-1430	R	watch	SE	pavement edge	transport	edge of street	3.705
A	Margaret Street	Thursday	1230-1430	R	talk	LE	window display	retail	shop	3.705
A	Margaret Street	Thursday	1230-1430	R	talk	LE	window display	retail	shop	3.705
A	Margaret Street	Thursday	1230-1430	N	mobile	SE	pavement edge	transport	edge of street	3.705
A	Margaret Street	Thursday	1230-1430	R	watch	SE	pavement edge	transport	edge of street	3.705
A	Margaret Street	Thursday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	3.705
A	Margaret Street	Thursday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	3.705
A	Margaret Street	Thursday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	3.705
A	Margaret Street	Thursday	1230-1430	R	watch	SE	pavement edge	transport	edge of street	3.705
A	Margaret Street	Thursday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	3.705
A	Margaret Street	Thursday	1230-1430	N	cigar	SE	end of street	transport	junction	3.705
A	Margaret Street	Thursday	1230-1430	N	cigar	LE	window display	retail	shop	3.705
A	Margaret Street	Thursday	1230-1430	R	talk	LE	window display	retail	shop	3.705
A	Margaret Street	Thursday	1230-1430	R	talk	LE	window display	retail	shop	3.705
A	Margaret Street	Thursday	1230-1430	R	talk	LE	window display	retail	shop	3.705
A	Margaret Street	Thursday	1230-1430	R	talk	LE	window display	retail	shop	3.705
A	Margaret Street	Thursday	1230-1430	R	talk	SE	end of street	transport	junction	3.705
A	Margaret Street	Thursday	1230-1430	R	talk	SE	end of street	transport	junction	3.705

A	Margaret Street	Thursday	1230-1430	R	talk	SE	end of street	transport	junction	3.705
A	Margaret Street	Thursday	1230-1430	N	wait	LE	cash point	retail	shop	3.705
A	Margaret Street	Thursday	1230-1430	N	wait	LE	cash point	retail	shop	3.705
A	Margaret Street	Thursday	1230-1430	N	wait	LE	cash point	retail	shop	3.705
A	Margaret Street	Thursday	1230-1430	N	wait	LE	cash point	retail	shop	3.705
A	Margaret Street	Thursday	1230-1430	N	cigar	LE	window display	retail	shop	3.705
A	Margaret Street	Thursday	1230-1430	N	cigar	LE	window display	retail	shop	3.705
A	Margaret Street	Thursday	1230-1430	N	cigar	LE	window display	retail	shop	3.705
A	Margaret Street	Thursday	1230-1430	N	cigar	LE	window display	retail	shop	3.705
A	Margaret Street	Thursday	1230-1430	N	cigar	LE	window display	retail	shop	3.705
A	Margaret Street	Thursday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	3.705
A	Margaret Street	Thursday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	3.705
A	Margaret Street	Thursday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	3.705
A	Margaret Street	Thursday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	3.705
A	Margaret Street	Thursday	1730-1930	N	wait	LE	cash point	services	bank	3.705
A	Margaret Street	Thursday	1730-1930	N	wait	LE	cash point	services	bank	3.705
A	Margaret Street	Thursday	1730-1930	N	cigar	LE	window display	retail	hair beauty	3.705
A	Margaret Street	Thursday	1730-1930	N	wait	SE	pavement edge	transport	edge of street	3.705
A	Margaret Street	Thursday	1730-1930	R	talk	LE	window display	retail	shop	3.705
A	Margaret Street	Thursday	1730-1930	R	talk	LE	window display	retail	shop	3.705
A	Margaret Street	Thursday	1730-1930	N	cigar	LE	window display	retail	shop	3.705
A	Margaret Street	Thursday	1730-1930	R	drink	LE	eatery place	catering	pub	3.705
A	Margaret Street	Thursday	1730-1930	R	drink	LE	eatery place	catering	pub	3.705
A	Margaret Street	Thursday	1730-1930	N	browse	LE	news agent	retail	shop	3.705
A	Margaret Street	Thursday	1730-1930	N	browse	LE	news agent	retail	shop	3.705
A	Margaret Street	Thursday	1730-1930	N	wait	LE	news agent	retail	shop	3.705
A	Margaret Street	Thursday	1730-1930	N	wait	LE	news agent	retail	shop	3.705
A	Great Castle Street	Thursday	0930-1130	N	browse	LE	eatery place	catering	cafe	2.781
A	Great Castle Street	Thursday	0930-1130	N	browse	LE	eatery place	catering	cafe	2.781
A	Great Castle Street	Thursday	0930-1130	R	talk	LE	window display	retail	shop	2.781
A	Great Castle Street	Thursday	0930-1130	R	talk	LE	window display	retail	shop	2.781
A	Great Castle Street	Thursday	0930-1130	N	cigar	BE	building facade	retail	indent	2.781
A	Great Castle Street	Thursday	1230-1430	N	mobile	BE	pavement edge	transport	edge of street	2.781
A	Great Castle Street	Thursday	1230-1430	N	mobile	BE	building facade	retail	basement fence	2.781
A	Great Castle Street	Thursday	1230-1430	N	cigar	SE	pavement edge	transport	edge of street	2.781
A	Great Castle Street	Thursday	1230-1430	R	watch	SE	pavement edge	transport	edge of street	2.781
A	Great Castle Street	Thursday	1230-1430	N	cigar	SE	pavement edge	transport	edge of street	2.781
A	Great Castle Street	Thursday	1230-1430	N	mobile	SE	pavement edge	transport	edge of street	2.781
A	Great Castle Street	Thursday	1230-1430	N	mobile	SE	pavement edge	transport	edge of street	2.781

A	Great Castle Street	Thursday	1230-1430	N	cigar	BE	building facade	retail	indent	2.781
A	Great Castle Street	Thursday	1230-1430	N	mobile	LE	cash point	services	bank	2.781
A	Great Castle Street	Thursday	1230-1430	N	mobile	SE	pavement edge	transport	edge of street	2.781
A	Great Castle Street	Thursday	1230-1430	N	cigar	BE	building facade	office	basement fence	2.781
A	Great Castle Street	Thursday	1230-1430	N	cigar	BE	building facade	office	basement fence	2.781
A	Great Castle Street	Thursday	1230-1430	R	talk	BE	building facade	office	entrance	2.781
A	Great Castle Street	Thursday	1230-1430	R	talk	BE	building facade	office	entrance	2.781
A	Great Castle Street	Thursday	1230-1430	R	talk	BE	building facade	office	entrance	2.781
A	Great Castle Street	Thursday	1230-1430	N	browse	SE	end of street	transport	junction	2.781
A	Great Castle Street	Thursday	1230-1430	N	browse	SE	end of street	transport	junction	2.781
A	Great Castle Street	Thursday	1730-1930	O	drink	LE	eatory place	catering	bar	2.781
A	Great Castle Street	Thursday	1730-1930	O	drink	LE	eatory place	catering	bar	2.781
B	New Bond Street	Thursday	0930-1130	R	talk	SE	end of street	transport	junction	3.139
B	New Bond Street	Thursday	0930-1130	R	talk	SE	end of street	transport	junction	3.139
B	New Bond Street	Thursday	0930-1130	R	vendor	SE	end of street	transport	junction	3.139
B	New Bond Street	Thursday	0930-1130	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	0930-1130	N	cigar	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	0930-1130	R	talk	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	0930-1130	R	talk	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	0930-1130	R	watch	SE	pavement edge	transport	edge of street	3.139
B	New Bond Street	Thursday	0930-1130	N	mobile	BE	public/private entrance	retail	entrance	3.139
B	New Bond Street	Thursday	0930-1130	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	0930-1130	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	0930-1130	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	0930-1130	N	mobile	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	0930-1130	N	mobile	BE	public/private entrance	retail	entrance	3.139
B	New Bond Street	Thursday	0930-1130	O	read	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	0930-1130	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	0930-1130	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	0930-1130	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	0930-1130	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	0930-1130	N	cigar	SE	pavement edge	transport	edge of street	3.139
B	New Bond Street	Thursday	0930-1130	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	0930-1130	N	mobile	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	0930-1130	R	talk	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	0930-1130	R	talk	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	0930-1130	R	talk	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	0930-1130	R	talk	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	0930-1130	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	0930-1130	N	browse	LE	window display	retail	shop	3.139



B	New Bond Street	Thursday	0930-1130	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	0930-1130	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	0930-1130	N	wait	BE	public/private	retail	entrance	3.139
B	New Bond Street	Thursday	0930-1130	R	talk	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	0930-1130	R	talk	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	0930-1130	R	talk	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	0930-1130	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	0930-1130	R	talk	SE	end of street	transport	junction	3.139
B	New Bond Street	Thursday	0930-1130	R	talk	SE	end of street	transport	junction	3.139
B	New Bond Street	Thursday	0930-1130	N	cigar	BE	public/private entrance	retail	entrance	3.139
B	New Bond Street	Thursday	0930-1130	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	0930-1130	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	0930-1130	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	0930-1130	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	0930-1130	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	0930-1130	O	eat	LE	eatery place	catering	sandwich shop	3.139
B	New Bond Street	Thursday	0930-1130	O	eat	LE	eatery place	catering	sandwich shop	3.139
B	New Bond Street	Thursday	0930-1130	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	0930-1130	R	vendor	SE	pavement edge	transport	edge of street	3.139
B	New Bond Street	Thursday	0930-1130	R	watch	SE	pavement edge	transport	edge of street	3.139
B	New Bond Street	Thursday	0930-1130	N	mobile	SE	pavement edge	transport	edge of street	3.139
B	New Bond Street	Thursday	0930-1130	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	0930-1130	R	talk	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	0930-1130	R	talk	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	0930-1130	R	talk	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	0930-1130	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	0930-1130	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	0930-1130	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	0930-1130	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	0930-1130	R	watch	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	0930-1130	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	0930-1130	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	0930-1130	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	0930-1130	R	talk	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	0930-1130	R	talk	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	0930-1130	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	0930-1130	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	0930-1130	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	0930-1130	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	0930-1130	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	0930-1130	R	talk	LE	window display	retail	shop	3.139

B	New Bond Street	Thursday	0930-1130	R	talk	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	0930-1130	R	talk	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	0930-1130	N	cigar	SE	end of street	transport	junction	3.139
B	New Bond Street	Thursday	0930-1130	N	cigar	BE	public/private entrance	retail	entrance	3.139
B	New Bond Street	Thursday	0930-1130	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	0930-1130	N	browse	LE	window display	retail	shop	3.1393.139
B	New Bond Street	Thursday	0930-1130	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	0930-1130	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	0930-1130	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	0930-1130	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	0930-1130	N	cigar	BE	public/private entrance	retail	entrance	3.139
B	New Bond Street	Thursday	0930-1130	R	talk	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	0930-1130	R	talk	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	0930-1130	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	0930-1130	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	0930-1130	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	0930-1130	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	0930-1130	N	cigar	BE	public/private entrance	retail	entrance	3.139
B	New Bond Street	Thursday	0930-1130	R	vendor	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	0930-1130	R	vendor	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	0930-1130	R	vendor	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	0930-1130	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	0930-1130	N	mobile	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	0930-1130	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	1230-1430	O	eat	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	1230-1430	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	1230-1430	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	1230-1430	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	1230-1430	N	cigar	LE	cash point	services	bank	3.139
B	New Bond Street	Thursday	1230-1430	R	watch	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	1230-1430	R	talk	BE	public/private entrance	retail	entrance	3.139
B	New Bond Street	Thursday	1230-1430	R	talk	BE	public/private entrance	retail	entrance	3.139
B	New Bond Street	Thursday	1230-1430	N	mobile	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	1230-1430	R	talk	BE	public/private entrance	retail	entrance	3.139
B	New Bond Street	Thursday	1230-1430	R	talk	BE	public/private entrance	retail	entrance	3.139
B	New Bond Street	Thursday	1230-1430	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	1230-1430	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	1230-1430	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	1230-1430	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	1230-1430	N	browse	LE	window display	retail	shop	3.139



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B	New Bond Street	Thursday	1230-1430	R	talk	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	1230-1430	R	talk	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	1230-1430	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	1230-1430	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	1230-1430	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	1230-1430	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	1230-1430	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	1230-1430	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	1230-1430	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	1230-1430	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	1230-1430	N	mobile	BE	public/private entrance	retail	entrance	3.139
B	New Bond Street	Thursday	1730-1930	N	cigar	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	1730-1930	N	wait	LE	cash point	service	bank	3.139
B	New Bond Street	Thursday	1730-1930	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	1730-1930	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	1730-1930	N	cigar	LE	window display	retail	shop	3.139
B	New Bond Street	Thursday	1730-1930	N	wait	SE	pavement edge	transport	edge of street	3.139
B	New Bond Street	Thursday	1730-1930	R	talk	SE	pavement edge	transport	edge of street	3.139
B	New Bond Street	Thursday	1730-1930	N	wait	SE	pavement edge	transport	edge of street	3.139
B	Maddox Street	Thursday	0930-1130	O	eat	LE	window display	retail	shop	2.397
B	Maddox Street	Thursday	0930-1130	N	wait	BE	public/private entrance	retail	entrance	2.397
B	Maddox Street	Thursday	0930-1130	N	mobile	LE	window display	retail	shop	2.397
B	Maddox Street	Thursday	0930-1130	N	mobile	LE	window display	retail	shop	2.397
B	Maddox Street	Thursday	1230-1430	N	browse	LE	eatery place	catering	cafe	2.397
B	Maddox Street	Thursday	1230-1430	N	browse	LE	eatery place	catering	cafe	2.397
B	Maddox Street	Thursday	1230-1430	N	browse	LE	eatery place	catering	cafe	2.397
B	Maddox Street	Thursday	1230-1430	N	browse	LE	eatery place	catering	cafe	2.397
B	Maddox Street	Thursday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	2.397
B	Maddox Street	Thursday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	2.397
B	Maddox Street	Thursday	1530-1730	N	wait	LE	eatery place	catering	cafe	2.397
B	Old Burlington Street	Thursday	1230-1430	N	cigar	BE	public/private entrance	office	entrance	1.833
B	Maddox Street	Thursday	0930-1130	N	browse	LE	window display	retail	shop	2.397
B	Maddox Street	Thursday	0930-1130	N	browse	LE	window display	retail	shop	2.397
B	Maddox Street	Thursday	0930-1130	N	cigar	BE	public/private entrance	office	entrance	2.397
B	Maddox Street	Thursday	0930-1130	N	mobile	LE	window display	shop	shop	2.397
B	Maddox Street	Thursday	1230-1430	R	watch	LE	eatery place	catering	cafe	2.397
B	Maddox Street	Thursday	1230-1430	R	talk	LE	window display	catering	shop	2.397
B	Maddox Street	Thursday	1230-1430	R	talk	LE	window display	catering	shop	2.397
B	Maddox Street	Thursday	1230-1430	O	drink	SE	pavement edge	transport	edge of street	2.397
B	Maddox Street	Thursday	1230-1430	O	eat	LE	window display	retail	shop	2.397

B	Maddox Street	Thursday	1230-1430	O	eat	LE	window display	retail	shop	2.397
B	Maddox Street	Thursday	1230-1430	O	eat	LE	window display	retail	shop	2.397
B	Maddox Street	Thursday	1230-1430	N	mobile	SE	pavement edge	transport	edge of street	2.397
B	Maddox Street	Thursday	1230-1430	N	mobile	BE	public/private entrance	retail	entrance	2.397
B	Maddox Street	Thursday	1230-1430	N	cigar	LE	window display	retail	shop	2.397
B	Maddox Street	Thursday	1230-1430	N	mobile	LE	window display	retail	shop	2.397
B	Maddox Street	Thursday	1230-1430	R	vendor	SE	pavement edge	transport	edge of street	2.397
B	Maddox Street	Thursday	1230-1430	R	watch	SE	pavement edge	transport	edge of street	2.397
B	Maddox Street	Thursday	1230-1430	R	watch	BE	building facade	retail	indent of building	2.397
B	Maddox Street	Thursday	1230-1430	R	watch	BE	building facade	retail	indent of building	2.397
B	Old Burlington Street	Thursday	1230-1430	N	browse	LE	window display	retail	shop	1.833
B	Old Burlington Street	Thursday	1230-1430	O	eat	SE	pavement edge	transport	edge of street	1.833
B	Old Burlington Street	Thursday	1230-1430	N	cigar	BE	basement fence	retail	shop	1.833
B	Old Burlington Street	Thursday	1230-1430	N	cigar	SE	pavement edge	transport	edge of street	1.833
B	Old Burlington Street	Thursday	1230-1430	N	browse	LE	eatory place	catering	cafe	1.833
B	Old Burlington Street	Thursday	1230-1430	N	browse	LE	eatory place	catering	cafe	1.833
B	Old Burlington Street	Thursday	1230-1430	N	browse	LE	eatory place	catering	cafe	1.833
B	Old Burlington Street	Thursday	1230-1430	N	cigar	BE	building facade	retail	basement fence	1.833
B	Old Burlington Street	Thursday	1230-1430	N	mobile	BE	public/private entrance	retail	entrance	1.833
B	Old Burlington Street	Thursday	1230-1430	N	cigar	LE	window display	retail	shop	1.833
B	Old Burlington Street	Thursday	1230-1430	N	talk	LE	window display	retail	shop	1.833
B	Old Burlington Street	Thursday	1230-1430	N	talk	LE	window display	retail	shop	1.833
B	Old Burlington Street	Thursday	1230-1430	N	talk	LE	window display	retail	shop	1.833
B	Old Burlington Street	Thursday	1230-1430	N	talk	LE	window display	retail	shop	1.833
B	Old Burlington Street	Thursday	1230-1430	N	talk	LE	window display	retail	shop	1.833
C	Regent Street III/IV	Thursday	0930-1130	R	watch	BE	public/private entrance	retail	entrance	3.317
C	Regent Street III/IV	Thursday	0930-1130	N	browse	LE	window display	retail	shop	3.317
C	Regent Street III/IV	Thursday	0930-1130	N	browse	LE	window display	retail	shop	3.317
C	Regent Street III/IV	Thursday	0930-1130	N	browse	LE	window display	retail	shop	3.317
C	Regent Street III/IV	Thursday	0930-1130	N	browse	LE	window display	retail	shop	3.317
C	Regent Street III/IV	Thursday	0930-1130	N	browse	LE	window display	retail	shop	3.317
C	Regent Street III/IV	Thursday	0930-1130	N	browse	LE	window display	retail	shop	3.317
C	Regent Street III/IV	Thursday	0930-1130	R	watch	SE	pavement edge	transport	edge of street	3.317
C	Regent Street III/IV	Thursday	0930-1130	R	watch	LE	window display	retail	shop	3.317
C	Regent Street III/IV	Thursday	0930-1130	R	watch	LE	window display	retail	shop	3.317
C	Regent Street III/IV	Thursday	0930-1130	R	watch	LE	window display	retail	shop	3.317
C	Regent Street III/IV	Thursday	0930-1130	R	watch	LE	window display	retail	shop	3.317
C	Regent Street III/IV	Thursday	0930-1130	R	watch	LE	window display	retail	shop	3.317
C	Regent Street III/IV	Thursday	0930-1130	R	watch	LE	window display	retail	shop	3.317
C	Regent Street III/IV	Thursday	0930-1130	N	wait	BE	public/private entrance	retail	entrance	3.317
C	Regent Street III/IV	Thursday	0930-1130	R	watch	SE	pavement edge	transport	edge of street	3.317

[illegible]



C	Regent Street III/IV	Thursday	1230-1430	N	wait	LE	cash point	service	bank	3.317
C	Regent Street III/IV	Thursday	1230-1430	N	wait	LE	cash point	service	bank	3.317
C	Regent Street III/IV	Thursday	1230-1430	N	wait	LE	cash point	service	bank	3.317
C	Regent Street III/IV	Thursday	1230-1430	N	wait	LE	cash point	service	bank	3.317
C	Regent Street III/IV	Thursday	1230-1430	N	browse	LE	window display	retail	shop	3.317
C	Regent Street III/IV	Thursday	1230-1430	N	browse	LE	window display	retail	shop	3.317
C	Regent Street III/IV	Thursday	1230-1430	N	browse	LE	window display	retail	shop	3.317
C	Regent Street III/IV	Thursday	1230-1430	R	watch	BE	building facade	retail	pillar base	3.317
C	Regent Street III/IV	Thursday	1230-1430	N	wait	LE	cash point	service	bank	3.317
C	Regent Street III/IV	Thursday	1230-1430	N	wait	LE	cash point	service	bank	3.317
C	Regent Street III/IV	Thursday	1230-1430	N	wait	LE	cash point	service	bank	3.317
C	Regent Street III/IV	Thursday	1230-1430	R	watch	SE	end of street	transport	junction	3.317
C	Regent Street III/IV	Thursday	1230-1430	N	browse	LE	window display	retail	shop	3.317
C	Regent Street III/IV	Thursday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	3.317
C	Regent Street III/IV	Thursday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	3.317
C	Regent Street III/IV	Thursday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	3.317
C	Regent Street III/IV	Thursday	1230-1430	N	browse	LE	window display	retail	shop	3.317
C	Regent Street III/IV	Thursday	1230-1430	N	browse	LE	window display	retail	shop	3.317
C	Regent Street III/IV	Thursday	1230-1430	O	eat	SE	pavement edge	transport	street ege	3.317
C	Regent Street III/IV	Thursday	1230-1430	O	eat	SE	pavement edge	transport	street fence	3.317
C	Regent Street III/IV	Thursday	1230-1430	R	vendor	SE	pavement edge	transport	street ege	3.317
C	Regent Street III/IV	Thursday	1230-1430	N	browse	LE	window display	retail	shop	3.317
C	Regent Street III/IV	Thursday	1230-1430	N	browse	LE	window display	retail	shop	3.317
C	Regent Street III/IV	Thursday	1230-1430	N	browse	LE	window display	retail	shop	3.317
C	Regent Street III/IV	Thursday	1230-1430	N	browse	LE	window display	retail	shop	3.317
C	Regent Street III/IV	Thursday	1230-1430	N	browse	LE	window display	retail	shop	3.317
C	Regent Street III/IV	Thursday	1230-1430	N	map	LE	window display	retail	shop	3.317
C	Regent Street III/IV	Thursday	1230-1430	N	cigar	LE	public private entrance	retail	entrance	3.317
C	Regent Street III/IV	Thursday	1230-1430	N	cigar	LE	public private entrance	retail	entrance	3.317
C	Regent Street III/IV	Thursday	1730-1930	N	mobile	LE	window display	retail	shop	3.317
C	Regent Street III/IV	Thursday	1730-1930	N	mobile	LE	window display	retail	shop	3.317
C	Regent Street III/IV	Thursday	1730-1930	N	mobile	LE	window display	retail	shop	3.317
C	Regent Street III/IV	Thursday	1730-1930	N	mobile	LE	window display	retail	shop	3.317
C	Regent Street III/IV	Thursday	1730-1930	R	watch	LE	window display	retail	shop	3.317
C	Regent Street III/IV	Thursday	1730-1930	N	wait	LE	cash point	service	bank	3.317
C	Regent Street III/IV	Thursday	1730-1930	N	wait	LE	cash point	service	bank	3.317
C	Regent Street III/IV	Thursday	1730-1930	N	wait	LE	cash point	service	bank	3.317
C	Regent Street III/IV	Thursday	1730-1930	N	wait	LE	cash point	service	bank	3.317
C	Regent Street III/IV	Thursday	1730-1930	R	vendor	SE	pavement edge	transport	street edge	3.317
C	Regent Street III/IV	Thursday	1730-1930	R	vendor	SE	pavement edge	transport	street edge	3.317

C	Regent Street III/IV	Thursday	1730-1930	N	browse	LE	window display	retail	shop	3.317
C	Regent Street III/IV	Thursday	1730-1930	N	wait	LE	window display	retail	shop	3.317
C	Regent Street III/IV	Thursday	1730-1930	N	wait	LE	window display	retail	shop	3.317
C	Regent Street III/IV	Thursday	1730-1930	N	wait	LE	public/private entrance	retail	entrance	3.317
C	Regent Street III/IV	Thursday	1730-1930	R	talk	LE	window display	retail	shop	3.317
C	Regent Street III/IV	Thursday	1730-1930	R	talk	LE	window display	retail	shop	3.317
C	Regent Street III/IV	Thursday	1730-1930	N	mobile	SE	pavement edge	transport	street edge	3.317
C	Regent Street III/IV	Thursday	1730-1930	R	talk	SE	pavement edge	transport	street edge	3.317
C	Regent Street III/IV	Thursday	1730-1930	R	talk	SE	pavement edge	transport	street edge	3.317
C	Conduit Street	Thursday	0930-1130	N	wait	LE	window display	retail	shop	3.301
C	Conduit Street	Thursday	0930-1130	N	cigar	LE	window display	retail	shop	3.301
C	Conduit Street	Thursday	0930-1130	N	mobile	LE	window display	retail	shop	3.301
C	Conduit Street	Thursday	0930-1130	N	mobile	BE	public/private entrance	retail	entrance	3.301
C	Conduit Street	Thursday	0930-1130	N	cigar	BE	public/private entrance	retail	entrance	3.301
C	Conduit Street	Thursday	0930-1130	N	browse	LE	window display	retail	shop	3.301
C	Conduit Street	Thursday	0930-1130	O	eat	SE	pavement edge	transport	street edge	3.301
C	Conduit Street	Thursday	0930-1130	R	talk	SE	pavement edge	transport	street edge	3.301
C	Conduit Street	Thursday	0930-1130	R	talk	SE	pavement edge	transport	street edge	3.301
C	Conduit Street	Thursday	0930-1130	R	talk	SE	pavement edge	transport	street edge	3.301
C	Conduit Street	Thursday	0930-1130	N	mobile	LE	window display	office	window	3.301
C	Conduit Street	Thursday	0930-1130	N	mobile	LE	window display	retail	shop	3.301
C	Conduit Street	Thursday	0930-1130	N	mobile	LE	window display	retail	shop	3.301
C	Conduit Street	Thursday	1230-1430	N	mobile	LE	window display	retail	shop	3.301
C	Conduit Street	Thursday	1230-1430	N	cigar	LE	pavement edge	transport	street edge	3.301
C	Conduit Street	Thursday	1230-1430	N	cigar	LE	window display	retail	shop	3.301
C	Conduit Street	Thursday	1230-1430	O	eat	LE	window display	retail	shop	3.301
C	Conduit Street	Thursday	1230-1430	N	browse	BE	public/private entrance	retail	entrance	3.301
C	Conduit Street	Thursday	1230-1430	N	cigar	LE	window display	retail	shop	3.301
C	Conduit Street	Thursday	1230-1430	N	talk	LE	window display	retail	shop	3.301
C	Conduit Street	Thursday	1230-1430	N	talk	LE	window display	retail	shop	3.301
C	Conduit Street	Thursday	1230-1430	N	mobile	BE	public/private entrance	retail	entrance	3.301
C	Conduit Street	Thursday	1230-1430	O	eat	SE	pavement edge	transport	street edge	3.301
C	Conduit Street	Thursday	1230-1430	N	browse	LE	window display	retail	shop	3.301
C	Conduit Street	Thursday	1230-1430	N	browse	LE	window display	retail	shop	3.301
C	Conduit Street	Thursday	1230-1430	R	talk	LE	window display	retail	shop	3.301
C	Conduit Street	Thursday	1230-1430	R	talk	LE	window display	retail	shop	3.301
C	Conduit Street	Thursday	1230-1430	R	talk	LE	window display	retail	shop	3.301
C	Conduit Street	Thursday	1230-1430	O	eat	BE	public/private entrance	retail	entrance	3.301
C	Conduit Street	Thursday	1230-1430	N	browse	LE	window display	retail	shop	3.301
C	Conduit Street	Thursday	1230-1430	N	browse	LE	window display	retail	shop	3.301

C	Conduit Street	Thursday	1230-1430	O	eat	LE	window display	retail	shop	3.301
C	Conduit Street	Thursday	1230-1430	N	browse	LE	window display	retail	shop	3.301
C	Conduit Street	Thursday	1230-1430	N	browse	LE	window display	retail	shop	3.301
C	Conduit Street	Thursday	1230-1430	N	browse	LE	window display	retail	shop	3.301
C	Conduit Street	Thursday	1230-1430	N	browse	LE	window display	retail	shop	3.301
C	Conduit Street	Thursday	1230-1430	N	mobile	LE	window display	retail	shop	3.301
C	Conduit Street	Thursday	1230-1430	N	wait	LE	cash point	service	bank	3.301
C	Conduit Street	Thursday	1230-1430	N	wait	LE	cash point	services	bank	3.301
C	Conduit Street	Thursday	1230-1430	N	wait	LE	cash point	services	bank	3.301
C	Conduit Street	Thursday	1230-1430	N	mobile	LE	window display	retail	shop	3.301
C	Conduit Street	Thursday	1230-1430	N	cigar	BE	public/private entrance	retail	entrance	3.301
C	Conduit Street	Thursday	1230-1430	N	browse	LE	window display	retail	shop	3.301
C	Conduit Street	Thursday	1230-1430	N	browse	LE	window display	retail	shop	3.301
C	Conduit Street	Thursday	1230-1430	O	eat	SE	pavement edge	transport	street edge	3.301
C	Conduit Street	Thursday	1730-1930	N	wait	BE	building facade	retail	flower box	3.301
C	Conduit Street	Thursday	1730-1930	N	wait	BE	building facade	retail	flower box	3.301
C	Conduit Street	Thursday	1730-1930	N	wait	SE	end of street	transport	junction	3.301
C	Conduit Street	Thursday	1730-1930	N	wait	LE	cash point	service	bank	3.301
C	Conduit Street	Thursday	1730-1930	N	mobile	LE	window display	retail	shop	3.301
C	Hanover Street	Thursday	0930-1130	N	mobile	SE	pavement edge	transport	street edge	2.485
C	Hanover Street	Thursday	0930-1130	N	mobile	SE	pavement edge	transport	street edge	2.485
C	Hanover Street	Thursday	0930-1130	N	mobile	SE	pavement edge	transport	edge of street	2.485
C	Hanover Street	Thursday	0930-1130	N	wait	LE	cash point	services	bank	2.485
C	Hanover Street	Thursday	0930-1130	N	wait	LE	cash point	services	bank	2.485
C	Hanover Street	Thursday	0930-1130	R	watch	SE	public facilities	transport	bin	2.485
C	Hanover Street	Thursday	0930-1130	N	mobile	BE	public/private	office	entrance	2.485
C	Hanover Street	Thursday	0930-1130	O	read	SE	pavement edge	transport	edge of street	2.485
C	Hanover Street	Thursday	0930-1130	N	browse	LE	window display	retail	shop	2.485
C	Hanover Street	Thursday	0930-1130	N	browse	LE	window display	retail	shop	2.485
C	Hanover Street	Thursday	0930-1130	N	cigar	BE	public/private	retail	entrance	2.485
C	Hanover Street	Thursday	0930-1130	R	watch	SE	pavement edge	transport	edge of street	2.485
C	Hanover Street	Thursday	0930-1130	N	mobile	BE	public/private	retail	entrance	2.485
C	Hanover Street	Thursday	0930-1130	N	wait	LE	cash point	services	bank	2.485
C	Hanover Street	Thursday	1230-1430	N	browse	LE	window display	retail	shop	2.485
C	Hanover Street	Thursday	1230-1430	N	browse	LE	window display	retail	shop	2.485
C	Hanover Street	Thursday	1230-1430	N	mobile	SE	pavement edge	transport	edge of street	2.485
C	Hanover Street	Thursday	1230-1430	N	cigar	SE	pavement edge	transport	edge of street	2.485
C	Hanover Street	Thursday	1230-1430	N	cigar	SE	pavement edge	transport	edge of street	2.485
C	Hanover Street	Thursday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	2.485
C	Hanover Street	Thursday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	2.485

C	Hanover Street	Thursday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	2.485
C	Hanover Street	Thursday	1230-1430	N	browse	SE	window display	retail	shop	2.485
C	Hanover Street	Thursday	1230-1430	N	browse	SE	window display	retail	shop	2.485
C	Hanover Street	Thursday	1230-1430	N	map	SE	pavement edge	transport	edge of street	2.485
C	Hanover Street	Thursday	1230-1430	N	map	SE	pavement edge	transport	edge of street	2.485
C	Hanover Street	Thursday	1230-1430	N	wait	LE	cash point	services	bank	2.485
C	Hanover Street	Thursday	1230-1430	N	wait	LE	cash point	services	bank	2.485
C	Hanover Street	Thursday	1230-1430	N	wait	LE	cash point	services	bank	2.485
C	Hanover Street	Thursday	1230-1430	N	mobile	LE	window display	retail	shop	2.485
C	Hanover Street	Thursday	1230-1430	N	browse	LE	window display	retail	shop	2.485
C	Hanover Street	Thursday	1230-1430	N	browse	LE	window display	retail	shop	2.485
C	Hanover Street	Thursday	1230-1430	N	mobile	LE	window display	retail	shop	2.485
C	Hanover Street	Thursday	1730-1930	N	wait	LE	cash point	services	bank	2.485
C	Hanover Street	Thursday	1730-1930	N	browse	LE	eatory place	catering	restaurant	2.485
C	Hanover Street	Thursday	1730-1930	N	browse	LE	eatory place	catering	restaurant	2.485
C	Hanover Street	Thursday	1730-1930	O	eat	LE	eatory place	catering	restaurant	2.485
C	Hanover Street	Thursday	1730-1930	O	eat	LE	eatory place	catering	restaurant	2.485
C	Hanover Street	Thursday	1730-1930	O	eat	LE	eatory place	catering	restaurant	2.485
C	Hanover Street	Thursday	1730-1930	O	drink	LE	eatory place	catering	restaurant	2.485
C	Hanover Street	Thursday	1730-1930	N	browse	LE	eatory place	catering	restaurant	2.485
D	Regent Street V	Thursday	0930-1130	N	cigar	BE	public private	retail	shop	3.883
D	Regent Street V	Thursday	0930-1130	N	cigar	BE	building facade	retail	building indent	3.883
D	Regent Street V	Thursday	0930-1130	N	map	LE	window display	retail	shop	3.883
D	Regent Street V	Thursday	0930-1130	N	cigar	BE	public private	retail	entrance	3.883
D	Regent Street V	Thursday	0930-1130	N	browse	LE	window display	retail	shop	3.883
D	Regent Street V	Thursday	0930-1130	N	browse	LE	window display	retail	shop	3.883
D	Regent Street V	Thursday	0930-1130	N	wait	BE	public private	retail	entrance	3.883
D	Regent Street V	Thursday	0930-1130	N	mobile	LE	pavement edge	transport	edge of street	3.883
D	Regent Street V	Thursday	0930-1130	N	mobile	LE	window display	retail	shop	3.883
D	Regent Street V	Thursday	0930-1130	N	browse	LE	window display	retail	shop	3.883
D	Regent Street V	Thursday	0930-1130	N	browse	LE	window display	retail	shop	3.883
D	Regent Street V	Thursday	0930-1130	N	cigar	BE	public private	retail	entrance	3.883
D	Regent Street V	Thursday	1230-1430	R	talk	BE	building facade	retail	building indent	3.883
D	Regent Street V	Thursday	1230-1430	R	talk	BE	building facade	retail	building indent	3.883
D	Regent Street V	Thursday	1230-1430	N	cigar	BE	building facade	retail	building indent	3.883
D	Regent Street V	Thursday	1230-1430	R	watch	BE	building facade	retail	ledges and sills	3.883
D	Regent Street V	Thursday	1230-1430	R	watch	BE	building facade	retail	ledges and sills	3.883
D	Regent Street V	Thursday	1230-1430	R	watch	BE	building facade	retail	ledges and sills	3.883
D	Regent Street V	Thursday	1230-1430	N	browse	LE	window display	retail	shop	3.883
D	Regent Street V	Thursday	1230-1430	N	browse	LE	window display	retail	shop	3.883

D	Regent Street V	Thursday	1230-1430	O	picture	SE	public facilities	transport	lamp post	3.883
D	Regent Street V	Thursday	1230-1430	N	wait	SE	pavement edge	transport	edge of street	3.883
D	Regent Street V	Thursday	1230-1430	N	browse	LE	window display	retail	shop	3.883
D	Regent Street V	Thursday	1230-1430	N	browse	LE	window display	retail	shop	3.883
D	Regent Street V	Thursday	1230-1430	N	browse	LE	window display	retail	shop	3.883
D	Regent Street V	Thursday	1230-1430	N	cigar	BE	public private	retail	entrance	3.883
D	Regent Street V	Thursday	1230-1430	R	watch	BE	public private	retail	entrance	3.883
D	Regent Street V	Thursday	1230-1430	N	wait	SE	pavement edge	transport	edge of street	3.883
D	Regent Street V	Thursday	1230-1430	N	mobile	LE	window display	retail	shop	3.883
D	Regent Street V	Thursday	1230-1430	N	wait	SE	pavement edge	transport	edge of street	3.883
D	Regent Street V	Thursday	1230-1430	R	watch	SE	pavement edge	transport	edge of street	3.883
D	Regent Street V	Thursday	1230-1430	N	wait	SE	pavement edge	transport	edge of street	3.883
D	Regent Street V	Thursday	1730-1930	N	wait	SE	pavement edge	transport	edge of street	3.883
D	Regent Street V	Thursday	1730-1930	N	wait	SE	pavement edge	transport	edge of street	3.883
D	Regent Street V	Thursday	1730-1930	N	mobile	LE	window display	retail	shop	3.883
D	Regent Street V	Thursday	1730-1930	R	watch	LE	window display	retail	shop	3.883
D	Regent Street V	Thursday	1730-1930	N	mobile	LE	window display	retail	shop	3.883
D	Regent Street V	Thursday	1730-1930	N	browse	LE	window display	retail	shop	3.883
D	Regent Street V	Thursday	1730-1930	N	wait	LE	window display	retail	shop	3.883
D	Regent Street V	Thursday	1730-1930	N	wait	LE	window display	retail	shop	3.883
D	Regent Street V	Thursday	1730-1930	N	cigar	BE	public/private entrance	retail	entrance	3.883
D	Regent Street V	Thursday	1730-1930	N	wait	BE	public/private entrance	retail	entrance	3.883
D	Regent Street V	Thursday	1730-1930	R	talk	SE	pavement edge	transport	edge of street	3.883
D	Regent Street V	Thursday	1730-1930	R	talk	SE	pavement edge	transport	edge of street	3.883
D	Gt Marborough Street	Thursday	0930-1130	N	browse	LE	window display	retail	shop	2.805
D	Gt Marborough Street	Thursday	0930-1130	N	mobile	LE	window display	retail	shop	2.805
D	Gt Marborough Street	Thursday	0930-1130	R	watch	SE	end of street	transport	junction	2.805
D	Gt Marborough Street	Thursday	0930-1130	R	vendor	SE	pavement edge	transport	edge of street	2.805
D	Gt Marborough Street	Thursday	0930-1130	R	watch	SE	pavement edge	transport	edge of street	2.805
D	Gt Marborough Street	Thursday	0930-1130	N	mobile	LE	window display	retail	shop	2.805
D	Gt Marborough Street	Thursday	0930-1130	N	cigar	LE	window display	retail	shop	2.805
D	Gt Marborough Street	Thursday	0930-1130	N	mobile	LE	window display	retail	shop	2.805
D	Gt Marborough Street	Thursday	0930-1130	N	mobile	SE	public facilities	transport	phone booth	2.805
D	Gt Marborough Street	Thursday	0930-1130	N	cigar	BE	building facades	retail	basement fence	2.805
D	Gt Marborough Street	Thursday	0930-1130	R	watch	SE	public facilities	transport	phone booth	2.805
D	Gt Marborough Street	Thursday	0930-1130	N	cigar	SE	pavement edge	transport	edge of street	2.805
D	Gt Marborough Street	Thursday	0930-1130	O	drink	SE	pavement edge	transport	edge of street	2.805
D	Gt Marborough Street	Thursday	0930-1130	R	talk	SE	pavement edge	transport	edge of street	2.805
D	Gt Marborough Street	Thursday	0930-1130	R	talk	SE	pavement edge	transport	edge of street	2.805
D	Gt Marborough Street	Thursday	0930-1130	R	watch	SE	pavement edge	transport	edge of street	2.805

D	Gt Marborough Street	Thursday	0930-1130	N	mobile	LE	window display	retail	shop	2.805
D	Gt Marborough Street	Thursday	0930-1130	R	talk	LE	window display	retail	shop	2.805
D	Gt Marborough Street	Thursday	0930-1130	R	talk	LE	window display	retail	shop	2.805
D	Gt Marborough Street	Thursday	0930-1130	R	talk	BE	building facades	retail	building indent	2.805
D	Gt Marborough Street	Thursday	0930-1130	R	talk	BE	building facades	retail	building indent	2.805
D	Gt Marborough Street	Thursday	0930-1130	R	watch	SE	pavement edge	transport	edge of street	2.805
D	Gt Marborough Street	Thursday	0930-1130	R	watch	LE	window display	retail	shop	2.805
D	Gt Marborough Street	Thursday	0930-1130	R	watch	LE	window display	retail	shop	2.805
D	Gt Marborough Street	Thursday	0930-1130	R	talk	LE	window display	retail	shop	2.805
D	Gt Marborough Street	Thursday	0930-1130	R	talk	LE	window display	retail	shop	2.805
D	Gt Marborough Street	Thursday	0930-1130	R	talk	SE	pavement edge	transport	edge of street	2.805
D	Gt Marborough Street	Thursday	0930-1130	R	talk	SE	pavement edge	transport	edge of street	2.805
D	Gt Marborough Street	Thursday	0930-1130	R	watch	LE	window display	retail	shop	2.805
D	Gt Marborough Street	Thursday	0930-1130	R	watch	LE	window display	retail	shop	2.805
D	Gt Marborough Street	Thursday	0930-1130	R	talk	LE	window display	retail	shop	2.805
D	Gt Marborough Street	Thursday	0930-1130	R	talk	LE	window display	retail	shop	2.805
D	Gt Marborough Street	Thursday	0930-1130	R	talk	BE	public private entrance	office	entrance	2.805
D	Gt Marborough Street	Thursday	0930-1130	R	talk	BE	public private entrance	office	entrance	2.805
D	Gt Marborough Street	Thursday	0930-1130	N	mobile	SE	pavement edge	transport	edge of street	2.805
D	Gt Marborough Street	Thursday	0930-1130	R	watch	SE	pavement edge	transport	edge of street	2.805
D	Gt Marborough Street	Thursday	0930-1130	N	cigar	LE	window display	retail	shop	2.805
D	Gt Marborough Street	Thursday	0930-1130	N	cigar	LE	window display	retail	shop	2.805
D	Gt Marborough Street	Thursday	1230-1430	N	wait	SE	end of street	transport	junction	2.805
D	Gt Marborough Street	Thursday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	2.805
D	Gt Marborough Street	Thursday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	2.805
D	Gt Marborough Street	Thursday	1230-1430	N	mobile	BE	public private entrance	retail	entrance	2.805
D	Gt Marborough Street	Thursday	1230-1430	N	mobile	BE	public private entrance	retail	entrance	2.805
D	Gt Marborough Street	Thursday	1230-1430	R	talk	BE	building facades	retail	building indent	2.805
D	Gt Marborough Street	Thursday	1230-1430	R	talk	BE	building facades	retail	building indent	2.805
D	Gt Marborough Street	Thursday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	2.805
D	Gt Marborough Street	Thursday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	2.805
D	Gt Marborough Street	Thursday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	2.805
D	Gt Marborough Street	Thursday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	2.805
D	Gt Marborough Street	Thursday	1230-1430	N	wait	LE	window display	retail	shop	2.805
D	Gt Marborough Street	Thursday	1230-1430	N	wait	LE	window display	retail	shop	2.805
D	Gt Marborough Street	Thursday	1230-1430	N	cigar	LE	window display	retail	shop	2.805
D	Gt Marborough Street	Thursday	1230-1430	R	talk	SE	pavement edge	transport	street fence	2.805
D	Gt Marborough Street	Thursday	1230-1430	R	talk	SE	pavement edge	transport	street fence	2.805
D	Gt Marborough Street	Thursday	1230-1430	R	watch	LE	window display	retail	shop	2.805
D	Gt Marborough Street	Thursday	1230-1430	N	mobile	BE	public private entrance	office	entrance	2.805



D	Gt Marborough Street	Thursday	1230-1430	R	vendor	SE	pavement edge	transport	edge of street	2.805
D	Gt Marborough Street	Thursday	1230-1430	N	mobile	SE	pavement edge	transport	edge of street	2.805
D	Gt Marborough Street	Thursday	1230-1430	N	browse	LE	eatery place	catering	restaurant	2.805
D	Gt Marborough Street	Thursday	1230-1430	N	cigar	SE	pavement edge	transport	edge of street	2.805
D	Gt Marborough Street	Thursday	1230-1430	R	talk	LE	window display	retail	shop	2.805
D	Gt Marborough Street	Thursday	1230-1430	R	talk	LE	window display	retail	shop	2.805
D	Gt Marborough Street	Thursday	1230-1430	R	talk	LE	window display	retail	shop	2.805
D	Gt Marborough Street	Thursday	1230-1430	R	talk	LE	window display	retail	shop	2.805
D	Gt Marborough Street	Thursday	1230-1430	N	cigar	LE	window display	retail	shop	2.805
D	Gt Marborough Street	Thursday	1230-1430	R	talk	LE	window display	retail	shop	2.805
D	Gt Marborough Street	Thursday	1230-1430	R	talk	LE	window display	retail	shop	2.805
D	Gt Marborough Street	Thursday	1230-1430	N	mobile	SE	pavement edge	transport	edge of street	2.805
D	Gt Marborough Street	Thursday	1230-1430	N	mobile	SE	pavement edge	transport	edge of street	2.805
D	Gt Marborough Street	Thursday	1230-1430	N	mobile	LE	window display	retail	shop	2.805
D	Gt Marborough Street	Thursday	1230-1430	N	mobile	SE	pavement edge	transport	edge of street	2.805
D	Gt Marborough Street	Thursday	1230-1430	N	mobile	SE	pavement edge	transport	edge of street	2.805
D	Gt Marborough Street	Thursday	1230-1430	N	mobile	SE	pavement edge	transport	edge of street	2.805
D	Gt Marborough Street	Thursday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	2.805
D	Gt Marborough Street	Thursday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	2.805
D	Gt Marborough Street	Thursday	1230-1430	R	talk	BE	public private	retail	entrance	2.805
D	Gt Marborough Street	Thursday	1230-1430	R	talk	BE	public private	retail	entrance	2.805
D	Gt Marborough Street	Thursday	1230-1430	N	mobile	BE	public private	retail	entrance	2.805
D	Gt Marborough Street	Thursday	1730-1930	N	browse	LE	window display	retail	shop	2.805
D	Gt Marborough Street	Thursday	1730-1930	N	mobile	BE	public private entrance	retail	entrance	2.805
D	Gt Marborough Street	Thursday	1730-1930	R	talk	LE	window display	retail	shop	2.805
D	Gt Marborough Street	Thursday	1730-1930	R	talk	LE	window display	retail	shop	2.805
D	Gt Marborough Street	Thursday	1730-1930	N	wait	BE	public private entrance	retail	entrance	2.805
D	Gt Marborough Street	Thursday	1730-1930	N	wait	BE	public private entrance	retail	entrance	2.805
D	Gt Marborough Street	Thursday	1730-1930	N	wait	BE	public private entrance	retail	entrance	2.805
D	Gt Marborough Street	Thursday	1730-1930	N	mobile	BE	public private entrance	retail	entrance	2.805
D	Gt Marborough Street	Thursday	1730-1930	N	browse	LE	window display	retail	shop	2.805
D	Gt Marborough Street	Thursday	1730-1930	N	wait	SE	pavement edge	transport	edge of street	2.805
D	Gt Marborough Street	Thursday	1730-1930	R	vendor	SE	pavement edge	transport	edge of street	2.805
D	Gt Marborough Street	Thursday	1730-1930	N	wait	BE	public private entrance	retail	entrance	2.805
D	Gt Marborough Street	Thursday	1730-1930	N	wait	LE	window display	retail	shop	2.805
D	Gt Marborough Street	Thursday	1730-1930	N	mobile	BE	public private entrance	retail	entrance	2.805
D	Gt Marborough Street	Thursday	1730-1930	N	mobile	SE	end of street	transport	junction	2.805
D	Gt Marborough Street	Thursday	1730-1930	R	talk	SE	pavement edge	transport	edge of street	2.805
D	Gt Marborough Street	Thursday	1730-1930	R	talk	SE	pavement edge	transport	edge of street	2.805
D	Gt Marborough Street	Thursday	1730-1930	N	mobile	SE	end of street	transport	junction	2.805

D	Gt Marborough Street	Thursday	1730-1930	N	wait	BE	public private	retail	entrance	2.805
D	Gt Marborough Street	Thursday	1730-1930	N	wait	BE	public private	retail	entrance	2.805
D	Gt Marborough Street	Thursday	1730-1930	N	mobile	SE	end of street	transport	junction	2.805
D	Gt Marborough Street	Thursday	1730-1930	R	talk	SE	pavement edge	transport	edge of street	2.805
D	Gt Marborough Street	Thursday	1730-1930	R	talk	SE	pavement edge	transport	edge of street	2.805
D	Kingly Street	Thursday	0930-1130	N	cigar	SE	pavement edge	transport	edge of street	2.524
D	Kingly Street	Thursday	0930-1130	N	cigar	SE	pavement edge	transport	edge of street	2.524
D	Kingly Street	Thursday	0930-1130	O	drink	LE	window display	office	window	2.524
D	Kingly Street	Thursday	0930-1130	O	drink	LE	window display	office	window	2.524
D	Kingly Street	Thursday	0930-1130	R	talk	BE	public private entrance	office	entrance	2.524
D	Kingly Street	Thursday	0930-1130	R	talk	BE	public private entrance	office	entrance	2.524
D	Kingly Street	Thursday	0930-1130	R	talk	BE	public private entrance	office	entrance	2.524
D	Kingly Street	Thursday	0930-1130	R	talk	BE	public private entrance	office	entrance	2.524
D	Kingly Street	Thursday	0930-1130	N	browse	LE	window display	transport	edge of street	2.524
D	Kingly Street	Thursday	0930-1130	R	talk	LE	window display	retail	shop	2.524
D	Kingly Street	Thursday	0930-1130	R	talk	LE	window display	retail	shop	2.524
D	Kingly Street	Thursday	0930-1130	N	mobile	SE	pavement edge	transport	edge of street	2.524
D	Kingly Street	Thursday	0930-1130	N	browse	LE	window display	retail	shop	2.524
D	Kingly Street	Thursday	0930-1130	R	watch	SE	pavement edge	transport	edge of street	2.524
D	Kingly Street	Thursday	0930-1130	R	watch	SE	public facilities	transport	phone booth	2.524
D	Kingly Street	Thursday	0930-1130	R	watch	SE	public facilities	transport	phone booth	2.524
D	Kingly Street	Thursday	0930-1130	R	watch	SE	public facilities	transport	phone booth	2.524
D	Kingly Street	Thursday	0930-1130	N	browse	LE	window display	retail	shop	2.524
D	Kingly Street	Thursday	0930-1130	N	browse	LE	window display	retail	shop	2.524
D	Kingly Street	Thursday	0930-1130	N	browse	LE	window display	retail	shop	2.524
D	Kingly Street	Thursday	0930-1130	N	browse	LE	window display	retail	shop	2.524
D	Kingly Street	Thursday	0930-1130	N	browse	LE	window display	retail	shop	2.524
D	Kingly Street	Thursday	0930-1130	N	cigar	BE	building facades	office	building indent	2.524
D	Kingly Street	Thursday	0930-1130	N	mobile	BE	building facades	office	building indent	2.524
D	Kingly Street	Thursday	0930-1130	N	mobile	BE	building facades	office	building indent	2.524
D	Kingly Street	Thursday	0930-1130	N	mobile	BE	building facades	office	building indent	2.524
D	Kingly Street	Thursday	0930-1130	N	browse	LE	window display	retail	shop	2.524
D	Kingly Street	Thursday	0930-1130	N	browse	LE	window display	retail	shop	2.524
D	Kingly Street	Thursday	0930-1130	N	browse	LE	window display	retail	shop	2.524
D	Kingly Street	Thursday	0930-1130	N	browse	LE	window display	retail	shop	2.524
D	Kingly Street	Thursday	0930-1130	N	browse	LE	window display	retail	shop	2.524
D	Kingly Street	Thursday	0930-1130	N	browse	LE	window display	retail	shop	2.524
D	Kingly Street	Thursday	0930-1130	N	mobile	BE	building facade	retail	building indent	2.524
D	Kingly Street	Thursday	0930-1130	N	mobile	BE	building facade	retail	building indent	2.524
D	Kingly Street	Thursday	0930-1130	N	mobile	BE	building facade	retail	building indent	2.524
D	Kingly Street	Thursday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	2.524

D	Kingly Street	Thursday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	2.524
D	Kingly Street	Thursday	1230-1430	R	watch	BE	public private entrance	office	entrance	2.524
D	Kingly Street	Thursday	1230-1430	R	watch	BE	public private entrance	office	entrance	2.524
D	Kingly Street	Thursday	1230-1430	N	mobile	LE	window display	retail	shop	2.524
D	Kingly Street	Thursday	1230-1430	R	talk	LE	window display	retail	shop	2.524
D	Kingly Street	Thursday	1230-1430	R	talk	LE	window display	retail	shop	2.524
D	Kingly Street	Thursday	1230-1430	R	talk	LE	window display	retail	shop	2.524
D	Kingly Street	Thursday	1230-1430	R	talk	LE	window display	retail	shop	2.524
D	Kingly Street	Thursday	1230-1430	R	talk	LE	window display	retail	shop	2.524
D	Kingly Street	Thursday	1230-1430	R	talk	LE	window display	retail	shop	2.524
D	Kingly Street	Thursday	1230-1430	R	watch	LE	eatory place	catering	cafe	2.524
D	Kingly Street	Thursday	1230-1430	N	browse	LE	window display	retail	shop	2.524
D	Kingly Street	Thursday	1230-1430	N	browse	LE	window display	retail	shop	2.524
D	Kingly Street	Thursday	1230-1430	R	talk	LE	window display	retail	shop	2.524
D	Kingly Street	Thursday	1230-1430	R	talk	LE	window display	retail	shop	2.524
D	Kingly Street	Thursday	1230-1430	N	mobile	BE	public private entrance	office	entrance	2.524
D	Kingly Street	Thursday	1230-1430	N	mobile	BE	public private entrance	office	entrance	2.524
D	Kingly Street	Thursday	1230-1430	N	mobile	BE	public private entrance	office	entrance	2.524
D	Kingly Street	Thursday	1230-1430	N	mobile	BE	public private entrance	office	entrance	2.524
D	Kingly Street	Thursday	1230-1430	N	mobile	BE	public private entrance	office	entrance	2.524
D	Kingly Street	Thursday	1230-1430	R	talk	BE	public private entrance	office	entrance	2.524
D	Kingly Street	Thursday	1230-1430	R	talk	BE	public private entrance	office	entrance	2.524
D	Kingly Street	Thursday	1230-1430	R	talk	BE	public private entrance	office	entrance	2.524
D	Kingly Street	Thursday	1230-1430	N	map	LE	window display	retail	shop	2.524
D	Kingly Street	Thursday	1230-1430	N	cigar	LE	public private entrance	office	entrance	2.524
D	Kingly Street	Thursday	1230-1430	R	talk	LE	window display	retail	shop	2.524
D	Kingly Street	Thursday	1230-1430	R	talk	LE	window display	retail	shop	2.524
D	Kingly Street	Thursday	1230-1430	R	talk	LE	window display	retail	shop	2.524
D	Kingly Street	Thursday	1230-1430	R	talk	LE	window display	retail	shop	2.524
D	Kingly Street	Thursday	1230-1430	N	cigar	BE	public private entrance	retail	entrance	2.524
D	Kingly Street	Thursday	1230-1430	N	cigar	BE	public private entrance	retail	entrance	2.524
D	Kingly Street	Thursday	1730-1930	N	mobile	SE	pavement edge	transport	edge of street	2.524
D	Kingly Street	Thursday	1730-1930	R	watch	LE	public private entrance	retail	entrance	2.524
D	Kingly Street	Thursday	1730-1930	N	mobile	BE	public private entrance	office	entrance	2.524
D	Kingly Street	Thursday	1730-1930	N	mobile	BE	public private entrance	office	entrance	2.524
D	Kingly Street	Thursday	1730-1930	N	browse	LE	window display	retail	shop	2.524
E	Regent Street VI/VII	Thursday	0930-1130	N	cigar	BE	public private entrance	retail	entrance	3.022
E	Regent Street VI/VII	Thursday	0930-1130	N	browse	LE	window display	retail	shop	3.022
E	Regent Street VI/VII	Thursday	0930-1130	N	cigar	BE	public private entrance	retail	entrance	3.022
E	Regent Street VI/VII	Thursday	0930-1130	N	cigar	BE	public private entrance	retail	entrance	3.022
E	Regent Street VI/VII	Thursday	0930-1130	N	browse	LE	window display	retail	shop	3.022

E	Regent Street VI/VII	Thursday	0930-1130	R	watch	BE	building facades	hotel	flower box	3.022
E	Regent Street VI/VII	Thursday	0930-1130	R	watch	BE	building facades	hotel	flower box	3.022
E	Regent Street VI/VII	Thursday	0930-1130	R	vendor	SE	pavement edge	transport	edge of street	3.022
E	Regent Street VI/VII	Thursday	0930-1130	N	cigar	BE	public private entrance	retail	entrance	3.022
E	Regent Street VI/VII	Thursday	0930-1130	N	cigar	BE	public private entrance	retail	entrance	3.022
E	Regent Street VI/VII	Thursday	1230-1430	N	browse	LE	window display	retail	shop	3.022
E	Regent Street VI/VII	Thursday	1230-1430	N	browse	LE	window display	retail	shop	3.022
E	Regent Street VI/VII	Thursday	1230-1430	N	browse	LE	window display	retail	shop	3.022
E	Regent Street VI/VII	Thursday	1230-1430	N	wait	SE	pavement edge	transport	edge of street	3.022
E	Regent Street VI/VII	Thursday	1230-1430	N	wait	SE	pavement edge	transport	lamp post	3.022
E	Regent Street VI/VII	Thursday	1230-1430	R	watch	SE	pavement edge	transport	edge of street	3.022
E	Regent Street VI/VII	Thursday	1230-1430	N	browse	LE	window display	retail	shop	3.022
E	Regent Street VI/VII	Thursday	1230-1430	N	browse	LE	window display	retail	shop	3.022
E	Regent Street VI/VII	Thursday	1230-1430	N	browse	LE	window display	retail	shop	3.022
E	Regent Street VI/VII	Thursday	1230-1430	R	vendor	LE	window display	retail	shop	3.022
E	Regent Street VI/VII	Thursday	1230-1430	N	browse	LE	window display	retail	shop	3.022
E	Regent Street VI/VII	Thursday	1230-1430	N	browse	LE	window display	retail	shop	3.022
E	Regent Street VI/VII	Thursday	1230-1430	N	browse	LE	window display	retail	shop	3.022
E	Regent Street VI/VII	Thursday	1230-1430	N	browse	LE	window display	retail	shop	3.022
E	Regent Street VI/VII	Thursday	1230-1430	N	browse	LE	window display	retail	shop	3.022
E	Regent Street VI/VII	Thursday	1230-1430	N	browse	LE	window display	retail	shop	3.022
E	Regent Street VI/VII	Thursday	1230-1430	R	watch	BE	public private entrance	retail	entrance	3.022
E	Regent Street VI/VII	Thursday	1230-1430	N	browse	LE	window display	retail	shop	3.022
E	Regent Street VI/VII	Thursday	1230-1430	N	browse	LE	window display	retail	shop	3.022
E	Regent Street VI/VII	Thursday	1230-1430	N	browse	LE	window display	retail	shop	3.022
E	Regent Street VI/VII	Thursday	1230-1430	N	browse	LE	eatery places	catering	restaurant	3.022
E	Regent Street VI/VII	Thursday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	3.022
E	Regent Street VI/VII	Thursday	1230-1430	R	talk	SE	pavement edge	transport	talk	3.022
E	Regent Street VI/VII	Thursday	1230-1430	R	watch	LE	window display	retail	shop	3.022
E	Regent Street VI/VII	Thursday	1230-1430	N	browse	LE	eatery places	catering	restaurant	3.022
E	Regent Street VI/VII	Thursday	1230-1430	N	browse	LE	window display	retail	shop	3.022
E	Regent Street VI/VII	Thursday	1230-1430	N	wait	SE	pavement edge	transport	edge of street	3.022
E	Regent Street VI/VII	Thursday	1230-1430	R	vendor	SE	pavement edge	transport	edge of street	3.022
E	Regent Street VI/VII	Thursday	1230-1430	N	cigar	BE	building facades	retail	building indent	3.022
E	Regent Street VI/VII	Thursday	1230-1430	N	cigar	BE	building facades	retail	building indent	3.022
E	Regent Street VI/VII	Thursday	1730-1930	N	browse	LE	window display	retail	shop	3.022
E	Regent Street VI/VII	Thursday	1730-1930	N	browse	LE	eatery place	catering	cafe	3.022
E	Regent Street VI/VII	Thursday	1730-1930	N	browse	LE	eatery place	catering	cafe	3.022
E	Regent Street VI/VII	Thursday	1730-1930	N	browse	LE	window display	retail	shop	3.022
E	Regent Street VI/VII	Thursday	1730-1930	N	browse	LE	window display	retail	shop	3.022

E	Regent Street VI/VII	Thursday	1730-1930	N	browse	LE	window display	retail	shop	3.022
E	Regent Street VI/VII	Thursday	1730-1930	N	browse	LE	eatery place	catering	cafe	3.022
E	Regent Street VI/VII	Thursday	1730-1930	N	browse	LE	eatery place	catering	cafe	3.022
E	Regent Street VI/VII	Thursday	1730-1930	R	watch	LE	eatery place	catering	cafe	3.022
E	Regent Street VI/VII	Thursday	1730-1930	N	browse	LE	window display	retail	shop	3.022
E	Regent Street VI/VII	Thursday	1730-1930	N	browse	LE	window display	retail	shop	3.022
E	Regent Street VI/VII	Thursday	1730-1930	N	browse	LE	window display	retail	shop	3.022
E	Regent Street VI/VII	Thursday	1730-1930	R	vendor	SE	pavement edge	transport	edge of street	3.022
E	Regent Street VI/VII	Thursday	1730-1930	N	wait	LE	eatery place	catering	cafe	3.022
E	Beak street	Thursday	0930-1130	N	cigar	BE	public private entrance	retail	entrance	2.877
E	Beak street	Thursday	0930-1130	N	cigar	BE	public private entrance	retail	entrance	2.877
E	Beak street	Thursday	1230-1430	N	browse	LE	news agent	retail	quick shop	2.877
E	Beak street	Thursday	1230-1430	N	browse	LE	news agent	retail	quick shop	2.877
E	Beak street	Thursday	1230-1430	N	wait	LE	news agent	retail	quick shop	2.877
E	Beak street	Thursday	1230-1430	N	cigar	BE	public private entrance	retail	entrance	2.877
E	Beak street	Thursday	1230-1430	N	cigar	BE	public private entrance	retail	entrance	2.877
E	Beak street	Thursday	1230-1430	N	wait	SE	pavement edge	transport	edge of street	2.877
E	Beak street	Thursday	1230-1430	N	wait	BE	public private entrance	retail	shop	2.877
E	Beak street	Thursday	1730-1930	O	drink	LE	eatery place	catering	pub	2.877
E	Beak street	Thursday	1730-1930	N	browse	LE	window display	retail	shop	2.877
E	Brewer Street	Thursday	0930-1130	N	cigar	BE	public private entrance	catering	entrance	2.252
E	Brewer Street	Thursday	0930-1130	N	cigar	BE	public private entrance	catering	entrance	2.252
E	Brewer Street	Thursday	0930-1130	R	watch	LE	eatery place	catering	cafe	2.252
E	Brewer Street	Thursday	0930-1130	N	cigar	BE	public private entrance	retail	steps	2.252
E	Brewer Street	Thursday	0930-1130	N	cigar	BE	building facades	retail	building indent	2.252
E	Brewer Street	Thursday	0930-1130	N	cigar	BE	public private entrance	retail	entrance	2.252
E	Brewer Street	Thursday	0930-1130	R	watch	SE	pavement edge	transport	edge of street	2.252
E	Brewer Street	Thursday	1230-1430	N	cigar	BE	public private entrance	catering	entrance	2.252
E	Brewer Street	Thursday	1230-1430	N	cigar	BE	public private entrance	catering	entrance	2.252
E	Brewer Street	Thursday	1230-1430	O	drink	LE	eatery place	catering	pub	2.252
E	Brewer Street	Thursday	1230-1430	O	drink	LE	eatery place	catering	pub	2.252
E	Brewer Street	Thursday	1230-1430	N	cigar	BE	building facades	retail	building indent	2.252
E	Brewer Street	Thursday	1230-1430	R	watch	LE	eatery place	catering	cafe	2.252
E	Brewer Street	Thursday	1230-1430	N	browse	LE	eatery place	catering	cafe	2.252
E	Brewer Street	Thursday	1230-1430	N	browse	LE	window display	retail	shop	2.252
E	Brewer Street	Thursday	1230-1430	N	browse	LE	eatery place	catering	restaurant	2.252
E	Brewer Street	Thursday	1230-1430	N	browse	LE	eatery place	catering	restaurant	2.252
E	Brewer Street	Thursday	1730-1930	N	browse	LE	news agent	retail	quick shop	2.252
E	Brewer Street	Thursday	1730-1930	N	cigar	BE	public private entrance	retail	entrance	2.252
E	Brewer Street	Thursday	1730-1930	N	cigar	BE	public private entrance	retail	entrance steps	2.252

E	Brewer Street	Thursday	1730-1930	N	cigar	BE	public private entrance	office	entrance	2.252
E	Brewer Street	Thursday	1730-1930	O	drink	LE	eatory place	catering	pub	2.252
E	Brewer Street	Thursday	1730-1930	O	drink	LE	eatory place	catering	pub	2.252
E	Brewer Street	Thursday	1730-1930	O	drink	LE	eatory place	catering	pub	2.252
E	Brewer Street	Thursday	1730-1930	O	drink	LE	eatory place	catering	pub	2.252
E	Brewer Street	Thursday	1730-1930	R	talk	LE	window display	retail	shop	2.252
E	Brewer Street	Thursday	1730-1930	R	talk	LE	window display	retail	shop	2.252
E	Brewer Street	Thursday	1730-1930	N	browse	LE	window display	retail	shop	2.252
E	Brewer Street	Thursday	1730-1930	N	browse	LE	window display	retail	shop	2.252
E	Brewer Street	Thursday	1730-1930	N	browse	LE	window display	retail	shop	2.252
E	Brewer Street	Thursday	1730-1930	N	browse	LE	window display	retail	shop	2.252
E	Brewer Street	Thursday	1730-1930	N	browse	LE	window display	retail	shop	2.252
E	Brewer Street	Thursday	1730-1930	R	talk	LE	eatory place	catering	cafe	2.252
E	Brewer Street	Thursday	1730-1930	R	talk	LE	eatory place	catering	cafe	2.252
E	Brewer Street	Thursday	1730-1930	R	talk	LE	eatory place	catering	cafe	2.252
E	Brewer Street	Thursday	1730-1930	R	talk	LE	eatory place	catering	cafe	2.252
E	Brewer Street	Thursday	1730-1930	N	mobile	LE	window display	retail	shop	2.252
E	Brewer Street	Thursday	1730-1930	R	talk	LE	window display	catering	cafe	2.252
E	Brewer Street	Thursday	1730-1930	R	talk	LE	window display	catering	cafe	2.252
E	Brewer Street	Thursday	1730-1930	R	talk	LE	window display	catering	bar	2.252
E	Brewer Street	Thursday	1730-1930	R	talk	LE	window display	catering	bar	2.252
E	Brewer Street	Thursday	1730-1930	N	wait	LE	window display	catering	bar	2.252
E	Brewer Street	Thursday	0930-1130	R	watch	LE	eatory place	catering	cafe	2.252
E	Brewer Street	Thursday	0930-1130	N	mobile	LE	window display	retail	shop	2.252
E	Brewer Street	Thursday	0930-1130	R	talk	LE	eatory place	catering	cafe	2.252
E	Brewer Street	Thursday	0930-1130	R	talk	LE	eatory place	catering	cafe	2.252
E	Brewer Street	Thursday	1230-1430	R	talk	LE	pavement edge	transport	edge of street	2.252
E	Brewer Street	Thursday	1230-1430	R	talk	LE	pavement edge	transport	edge of street	2.252
E	Brewer Street	Thursday	1230-1430	N	browse	LE	eatory place	catering	restaurant	2.252
E	Brewer Street	Thursday	1230-1430	N	browse	LE	eatory place	catering	restaurant	2.252
E	Brewer Street	Thursday	1230-1430	R	talk	LE	pavement edge	transport	edge of street	2.252
E	Brewer Street	Thursday	1230-1430	R	talk	LE	pavement edge	transport	edge of street	2.252
E	Brewer Street	Thursday	1230-1430	R	talk	LE	pavement edge	transport	edge of street	2.252
E	Brewer Street	Thursday	1230-1430	N	browse	LE	window display	retail	shop	2.252
E	Brewer Street	Thursday	1230-1430	N	browse	LE	window display	retail	shop	2.252
E	Brewer Street	Thursday	1230-1430	N	mobile	SE	pavement edge	transport	edge of street	2.252
F	Wardour Street	Thursday	0930-1130	N	mobile	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	0930-1130	O	eat	SE	public facilities	transport	phone booth	3.238
F	Wardour Street	Thursday	0930-1130	R	watch	SE	public facilities	transport	phone booth	3.238



F	Wardour Street	Thursday	0930-1130	R	talk	SE	public facilities	transport	phone booth	3.238
F	Wardour Street	Thursday	0930-1130	R	talk	SE	public facilities	transport	phone booth	3.238
F	Wardour Street	Thursday	0930-1130	N	mobile	BE	building facade	retail	indent of building	3.238
F	Wardour Street	Thursday	0930-1130	N	cigar	BE	building facade	retail	indent of building	3.238
F	Wardour Street	Thursday	0930-1130	O	eat	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	0930-1130	N	mobile	SE	pavement edge	transport	street barrier	3.238
F	Wardour Street	Thursday	0930-1130	O	read	BE	building facade	retail	indent of building	3.238
F	Wardour Street	Thursday	0930-1130	N	mobile	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	0930-1130	N	browse	LE	eatery place	catering	restaurant	3.238
F	Wardour Street	Thursday	0930-1130	N	browse	LE	eatery place	catering	restaurant	3.238
F	Wardour Street	Thursday	0930-1130	N	browse	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	0930-1130	R	talk	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	0930-1130	R	talk	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	0930-1130	R	watch	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	0930-1130	R	talk	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	0930-1130	R	talk	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	0930-1130	N	mobile	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	0930-1130	R	talk	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	0930-1130	R	talk	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	0930-1130	R	talk	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	0930-1130	R	talk	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	0930-1130	R	talk	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	0930-1130	R	talk	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	0930-1130	R	talk	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	0930-1130	R	talk	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	0930-1130	R	talk	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	0930-1130	R	talk	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	0930-1130	R	talk	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	0930-1130	R	talk	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	0930-1130	R	talk	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	0930-1130	R	talk	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	0930-1130	R	talk	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	0930-1130	R	talk	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	0930-1130	N	cigar	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	0930-1130	R	talk	SE	pavement edge	transport	edge of street	3.238
F	Wardour Street	Thursday	0930-1130	R	talk	SE	pavement edge	transport	edge of street	3.238
F	Wardour Street	Thursday	0930-1130	R	talk	SE	pavement edge	transport	edge of street	3.238
F	Wardour Street	Thursday	0930-1130	N	cigar	SE	pavement edge	transport	edge of street	3.238
F	Wardour Street	Thursday	0930-1130	R	talk	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	0930-1130	R	talk	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	0930-1130	R	watch	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	0930-1130	R	talk	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	0930-1130	R	talk	LE	window display	retail	shop	3.238

F	Wardour Street	Thursday	0930-1130	R	talk	SE	end of street	transport	junction	3.238
F	Wardour Street	Thursday	0930-1130	R	talk	SE	end of street	transport	junction	3.238
F	Wardour Street	Thursday	0930-1130	N	mobile	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	0930-1130	R	talk	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	0930-1130	R	talk	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	0930-1130	N	mobile	BE	building facade	retail	indent of building	3.238
F	Wardour Street	Thursday	0930-1130	O	eat	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	0930-1130	N	mobile	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	0930-1130	N	browse	LE	eatory place	catering	cafe	3.238
F	Wardour Street	Thursday	0930-1130	N	browse	LE	eatory place	catering	cafe	3.238
F	Wardour Street	Thursday	0930-1130	R	watch	LE	eatory place	catering	cafe	3.238
F	Wardour Street	Thursday	0930-1130	R	watch	LE	eatory place	catering	cafe	3.238
F	Wardour Street	Thursday	0930-1130	R	watch	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	0930-1130	N	mobile	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	1230-1430	R	talk	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	1230-1430	R	talk	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	1230-1430	R	talk	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	1230-1430	R	talk	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	1230-1430	R	talk	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	1230-1430	O	drink	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	1230-1430	N	browse	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	1230-1430	N	browse	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	1230-1430	N	cigar	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	1230-1430	O	eat	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	1230-1430	N	mobile	SE	pavement edge	transport	edge of street	3.238
F	Wardour Street	Thursday	1230-1430	R	talk	SE	end of street	transport	junction	3.238
F	Wardour Street	Thursday	1230-1430	R	talk	SE	end of street	transport	junction	3.238
F	Wardour Street	Thursday	1230-1430	N	mobile	SE	pavement edge	transport	edge of street	3.238
F	Wardour Street	Thursday	1230-1430	R	watch	SE	pavement edge	transport	edge of street	3.238
F	Wardour Street	Thursday	1230-1430	R	talk	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	1230-1430	R	talk	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	1230-1430	R	talk	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	1230-1430	R	talk	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	1230-1430	R	talk	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	1230-1430	R	talk	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	1230-1430	R	talk	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	1230-1430	N	browse	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	1230-1430	N	browse	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	1230-1430	R	talk	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	1230-1430	R	talk	LE	window display	retail	shop	3.238

F	Wardour Street	Thursday	1230-1430	N	browse	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	1230-1430	N	browse	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	1230-1430	N	mobile	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	1230-1430	O	eat	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	1230-1430	R	talk	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	1230-1430	R	talk	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	3.238
F	Wardour Street	Thursday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	3.238
F	Wardour Street	Thursday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	3.238
F	Wardour Street	Thursday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	3.238
F	Wardour Street	Thursday	1230-1430	R	talk	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	1230-1430	R	talk	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	1230-1430	N	mobile	BE	public private	retail	entrance	3.238
F	Wardour Street	Thursday	1230-1430	R	talk	SE	end of street	transport	junction	3.238
F	Wardour Street	Thursday	1230-1430	R	talk	SE	end of street	transport	junction	3.238
F	Wardour Street	Thursday	1230-1430	N	mobile	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	1230-1430	N	mobile	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	1230-1430	R	watch	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	1230-1430	R	talk	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	1230-1430	R	talk	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	1230-1430	N	browse	BE	eatery place	catering	cafe	3.238
F	Wardour Street	Thursday	1230-1430	N	browse	BE	eatery place	catering	cafe	3.238
F	Wardour Street	Thursday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	3.238
F	Wardour Street	Thursday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	3.238
F	Wardour Street	Thursday	1230-1430	R	talk	BE	public private entrance	retail	entrance	3.238
F	Wardour Street	Thursday	1230-1430	R	talk	BE	public private entrance	retail	entrance	3.238
F	Wardour Street	Thursday	1230-1430	O	eat	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	1230-1430	N	browse	LE	eatery place	eatery place	cafe	3.238
F	Wardour Street	Thursday	1230-1430	N	browse	LE	eatery place	eatery place	cafe	3.238
F	Wardour Street	Thursday	1230-1430	N	browse	LE	eatery place	eatery place	cafe	3.238
F	Wardour Street	Thursday	1230-1430	R	talk	LE	eatery place	catering	cafe	3.238
F	Wardour Street	Thursday	1230-1430	R	talk	LE	eatery place	catering	cafe	3.238
F	Wardour Street	Thursday	1230-1430	R	watch	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	1230-1430	R	watch	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	1230-1430	R	watch	LE	building facade	retail	indent of building	3.238
F	Wardour Street	Thursday	1230-1430	N	browse	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	1230-1430	N	browse	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	1230-1430	N	browse	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	1230-1430	N	mobile	LE	eatery place	catering	cafe	3.238
F	Wardour Street	Thursday	1230-1430	R	watch	LE	window display	retail	shop	3.238

F	Wardour Street	Thursday	1230-1430	N	watch	LE	cattery place	retail	shop	3.238
F	Wardour Street	Thursday	1230-1430	R	watch	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	1230-1430	R	watch	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	1230-1430	R	watch	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	1230-1430	N	cigar	LE	pavement edge	transport	street wall	3.238
F	Wardour Street	Thursday	1230-1430	N	cigar	LE	pavement edge	transport	street wall	3.238
F	Wardour Street	Thursday	1230-1430	N	cigar	LE	pavement edge	transport	street wall	3.238
F	Wardour Street	Thursday	1230-1430	R	talk	LE	pavement edge	transport	street wall	3.238
F	Wardour Street	Thursday	1230-1430	R	talk	LE	pavement edge	transport	street wall	3.238
F	Wardour Street	Thursday	1230-1430	R	watch	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	1230-1430	R	talk	LE	pavement edge	transport	edge of street	3.238
F	Wardour Street	Thursday	1230-1430	R	talk	LE	pavement edge	transport	edge of street	3.238
F	Wardour Street	Thursday	1230-1430	R	talk	LE	pavement edge	transport	edge of street	3.238
F	Wardour Street	Thursday	1230-1430	R	talk	LE	pavement edge	transport	edge of street	3.238
F	Wardour Street	Thursday	1230-1430	N	browse	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	1230-1430	N	browse	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	1230-1430	R	talk	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	1230-1430	R	talk	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	1230-1430	R	talk	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	1730-1930	N	wait	BE	public private entrance	retail	entrance	3.238
F	Wardour Street	Thursday	1730-1930	N	wait	BE	public private entrance	retail	entrance	3.238
F	Wardour Street	Thursday	1730-1930	N	wait	BE	public private entrance	retail	entrance	3.238
F	Wardour Street	Thursday	1730-1930	N	wait	BE	public private entrance	retail	entrance	3.238
F	Wardour Street	Thursday	1730-1930	N	wait	BE	public private entrance	retail	entrance	3.238
F	Wardour Street	Thursday	1730-1930	N	wait	BE	end of street	transport	junction	3.238
F	Wardour Street	Thursday	1730-1930	N	cigar	BE	public private entrance	retail	shop	3.238
F	Wardour Street	Thursday	1730-1930	N	cigar	BE	public private entrance	retail	shop	3.238
F	Wardour Street	Thursday	1730-1930	R	talk	BE	pavement edge	transport	edge of street	3.238
F	Wardour Street	Thursday	1730-1930	R	talk	BE	pavement edge	transport	edge of street	3.238
F	Wardour Street	Thursday	1730-1930	R	talk	BE	pavement edge	transport	edge of street	3.238
F	Wardour Street	Thursday	1730-1930	R	talk	BE	pavement edge	transport	edge of street	3.238
F	Wardour Street	Thursday	1730-1930	R	talk	BE	pavement edge	transport	edge of street	3.238
F	Wardour Street	Thursday	1730-1930	N	mobile	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	1730-1930	N	mobile	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	1730-1930	N	browse	LE	eatory place	catering	pub	3.238
F	Wardour Street	Thursday	1730-1930	N	mobile	LE	eatory place	catering	pub	3.238
F	Wardour Street	Thursday	1730-1930	R	talk	LE	building facade	retail	indent of building	3.238
F	Wardour Street	Thursday	1730-1930	R	talk	LE	building facade	retail	indent of building	3.238
F	Wardour Street	Thursday	1730-1930	R	talk	LE	building facade	retail	indent of building	3.238
F	Wardour Street	Thursday	1730-1930	R	talk	SE	pavement edge	transport	edge of street	3.238

F	Wardour Street	Thursday	1730-1930	R	talk	SE	pavement edge	transport	edge of street	3.238
F	Wardour Street	Thursday	1730-1930	R	talk	SE	pavement edge	transport	edge of street	3.238
F	Wardour Street	Thursday	1730-1930	R	talk	SE	pavement edge	transport	edge of street	3.238
F	Wardour Street	Thursday	1730-1930	R	talk	SE	pavement edge	transport	edge of street	3.238
F	Wardour Street	Thursday	1730-1930	R	talk	SE	pavement edge	transport	edge of street	3.238
F	Wardour Street	Thursday	1730-1930	R	talk	SE	pavement edge	transport	edge of street	3.238
F	Wardour Street	Thursday	1730-1930	R	talk	SE	pavement edge	transport	edge of street	3.238
F	Wardour Street	Thursday	1730-1930	R	watch	LE	eatery place	catering	pub	3.238
F	Wardour Street	Thursday	1730-1930	R	vendor	SE	pavement edge	transport	edge of street	3.238
F	Wardour Street	Thursday	1730-1930	N	cigar	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	1730-1930	N	cigar	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	1730-1930	N	cigar	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	1730-1930	R	watch	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	1730-1930	R	watch	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	1730-1930	R	watch	LE	window display	retail	shop	3.238
F	Wardour Street	Thursday	1730-1930	R	talk	SE	pavement edge	transport	edge of street	3.238
F	Wardour Street	Thursday	1730-1930	R	talk	SE	pavement edge	transport	edge of street	3.238
F	Wardour Street	Thursday	1730-1930	R	talk	SE	pavement edge	transport	edge of street	3.238
F	Wardour Street	Thursday	1730-1930	R	talk	SE	pavement edge	transport	edge of street	3.238
F	Wardour Street	Thursday	1730-1930	R	talk	SE	pavement edge	transport	edge of street	3.238
F	Wardour Street	Thursday	1730-1930	R	talk	SE	pavement edge	transport	edge of street	3.238
F	Wardour Street	Thursday	1730-1930	R	watch	LE	window display	retail	shop	3.238
F	Berwick Street	Thursday	0930-1130	N	mobile	LE	eatery place	catering	cafe	3.133
F	Berwick Street	Thursday	0930-1130	O	drink	BE	building facade	catering	indent of building	3.133
F	Berwick Street	Thursday	0930-1130	R	talk	LE	window display	retail	shop	3.133
F	Berwick Street	Thursday	0930-1130	R	talk	LE	window display	retail	shop	3.133
F	Berwick Street	Thursday	0930-1130	R	watch	SE	end of street	transport	junction	3.133
F	Berwick Street	Thursday	0930-1130	R	watch	SE	end of street	transport	junction	3.133
F	Berwick Street	Thursday	0930-1130	R	watch	SE	end of street	transport	junction	3.133
F	Berwick Street	Thursday	0930-1130	R	watch	SE	end of street	transport	junction	3.133
F	Berwick Street	Thursday	0930-1130	N	watch	LE	window display	retail	shop	3.133
F	Berwick Street	Thursday	0930-1130	N	watch	LE	window display	retail	shop	3.133
F	Berwick Street	Thursday	0930-1130	N	cigar	SE	pavement edge	transport	edge of street	3.133
F	Berwick Street	Thursday	0930-1130	N	mobile	LE	window display	retail	shop	3.133
F	Berwick Street	Thursday	0930-1130	N	mobile	LE	window display	retail	shop	3.133
F	Berwick Street	Thursday	0930-1130	N	browse	LE	window display	retail	shop	3.133
F	Berwick Street	Thursday	0930-1130	N	browse	LE	window display	retail	shop	3.133
F	Berwick Street	Thursday	0930-1130	N	browse	LE	window display	retail	shop	3.133
F	Berwick Street	Thursday	0930-1130	R	talk	SE	pavement edge	transport	edge of street	3.133

F	Berwick Street	Thursday	0930-1130	R	talk	SE	pavement edge	transport	edge of street	3.133
F	Berwick Street	Thursday	0930-1130	O	drink	LE	eatery place	catering	restaurant	3.133
F	Berwick Street	Thursday	0930-1130	N	cigar	LE	window display	retail	shop	3.133
F	Berwick Street	Thursday	0930-1130	N	browse	LE	window display	retail	shop	3.133
F	Berwick Street	Thursday	0930-1130	N	browse	LE	window display	retail	shop	3.133
F	Berwick Street	Thursday	0930-1130	N	browse	LE	window display	retail	shop	3.133
F	Berwick Street	Thursday	0930-1130	N	browse	LE	window display	retail	shop	3.133
F	Berwick Street	Thursday	0930-1130	N	browse	LE	window display	retail	shop	3.133
F	Berwick Street	Thursday	0930-1130	N	cigar	LE	window display	retail	shop	3.133
F	Berwick Street	Thursday	0930-1130	R	talk	LE	window display	retail	shop	3.133
F	Berwick Street	Thursday	0930-1130	R	talk	LE	window display	retail	shop	3.133
F	Berwick Street	Thursday	0930-1130	R	talk	LE	window display	retail	shop	3.133
F	Berwick Street	Thursday	0930-1130	R	vendor	SE	pavement edge	transport	edge of street	3.133
F	Berwick Street	Thursday	0930-1130	O	eat	SE	pavement edge	transport	edge of street	3.133
F	Berwick Street	Thursday	1230-1430	N	browse	LE	eatery place	catering	cafe	3.133
F	Berwick Street	Thursday	1230-1430	R	talk	LE	window display	retail	shop	3.133
F	Berwick Street	Thursday	1230-1430	R	talk	LE	window display	retail	shop	3.133
F	Berwick Street	Thursday	1230-1430	N	browse	LE	window display	retail	shop	3.133
F	Berwick Street	Thursday	1230-1430	N	mobile	LE	window display	retail	shop	3.133
F	Berwick Street	Thursday	1230-1430	R	talk	LE	eatery place	catering	cafe	3.133
F	Berwick Street	Thursday	1230-1430	R	talk	LE	eatery place	catering	cafe	3.133
F	Berwick Street	Thursday	1230-1430	R	talk	LE	eatery place	catering	cafe	3.133
F	Berwick Street	Thursday	1230-1430	R	talk	LE	eatery place	catering	cafe	3.133
F	Berwick Street	Thursday	1230-1430	R	talk	LE	window display	retail	shop	3.133
F	Berwick Street	Thursday	1230-1430	R	talk	LE	window display	retail	shop	3.133
F	Berwick Street	Thursday	1230-1430	N	cigar	LE	window display	retail	shop	3.133
F	Berwick Street	Thursday	1230-1430	N	cigar	SE	pavement edge	transport	edge of street	3.133
F	Berwick Street	Thursday	1230-1430	N	cigar	SE	pavement edge	transport	edge of street	3.133
F	Berwick Street	Thursday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	3.133
F	Berwick Street	Thursday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	3.133
F	Berwick Street	Thursday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	3.133
F	Berwick Street	Thursday	1230-1430	N	mobile	SE	end of street	transport	junction	3.133
F	Berwick Street	Thursday	1230-1430	N	browse	LE	window display	retail	shop	3.133
F	Berwick Street	Thursday	1230-1430	N	browse	LE	window display	retail	shop	3.133
F	Berwick Street	Thursday	1230-1430	N	browse	LE	window display	retail	shop	3.133
F	Berwick Street	Thursday	1230-1430	N	browse	LE	window display	retail	shop	3.133
F	Berwick Street	Thursday	1230-1430	N	mobile	LE	window display	retail	shop	3.133
F	Berwick Street	Thursday	1230-1430	O	drink	LE	window display	retail	shop	3.133
F	Berwick Street	Thursday	1230-1430	R	talk	LE	window display	retail	shop	3.133
F	Berwick Street	Thursday	1230-1430	R	talk	LE	window display	retail	shop	3.133



F	Berwick Street	Thursday	1230-1430	N	cigar	LE	window display	retail	shop	3.133
F	Berwick Street	Thursday	1230-1430	N	browse	LE	window display	retail	shop	3.133
F	Berwick Street	Thursday	1230-1430	R	watch	LE	window display	retail	shop	3.133
F	Berwick Street	Thursday	1230-1430	R	watch	LE	window display	retail	shop	3.133
F	Berwick Street	Thursday	1230-1430	R	watch	LE	window display	retail	shop	3.133
F	Berwick Street	Thursday	1230-1430	R	watch	LE	window display	retail	shop	3.133
F	Berwick Street	Thursday	1230-1430	R	watch	LE	window display	retail	shop	3.133
F	Berwick Street	Thursday	1730-1930	N	browse	LE	window display	retail	shop	3.133
F	Berwick Street	Thursday	1730-1930	N	mobile	LE	pavement edge	transport	edge of street	3.133
F	Broadwick Street	Thursday	0930-1130	R	watch	BE	building facade	retail	indent of building	2.784
F	Broadwick Street	Thursday	0930-1130	N	mobile	BE	window display	retail	shop	2.784
F	Broadwick Street	Thursday	0930-1130	R	talk	BE	public private entrance	retail	entrance	2.784
F	Broadwick Street	Thursday	0930-1130	R	talk	BE	public private entrance	retail	entrance	2.784
F	Broadwick Street	Thursday	0930-1130	R	talk	LE	eatery place	catering	restaurant	2.784
F	Broadwick Street	Thursday	0930-1130	R	talk	LE	eatery place	catering	restaurant	2.784
F	Broadwick Street	Thursday	0930-1130	N	mobile	LE	window display	retail	shop	2.784
F	Broadwick Street	Thursday	0930-1130	R	talk	LE	window display	retail	shop	2.784
F	Broadwick Street	Thursday	0930-1130	R	talk	LE	window display	retail	shop	2.784
F	Broadwick Street	Thursday	0930-1130	O	eat	LE	window display	retail	shop	2.784
F	Broadwick Street	Thursday	0930-1130	R	talk	LE	window display	retail	shop	2.784
F	Broadwick Street	Thursday	0930-1130	R	talk	LE	window display	retail	shop	2.784
F	Broadwick Street	Thursday	0930-1130	R	talk	LE	window display	retail	shop	2.784
F	Broadwick Street	Thursday	0930-1130	N	mobile	SE	pavement edge	transport	edge of street	2.784
F	Broadwick Street	Thursday	0930-1130	N	mobile	SE	pavement edge	transport	edge of street	2.784
F	Broadwick Street	Thursday	0930-1130	O	read	LE	window display	retail	shop	2.784
F	Broadwick Street	Thursday	0930-1130	R	watch	LE	window display	retail	shop	2.784
F	Broadwick Street	Thursday	0930-1130	N	cigar	LE	window display	retail	shop	2.784
F	Broadwick Street	Thursday	0930-1130	N	browse	LE	window display	retail	shop	2.784
F	Broadwick Street	Thursday	0930-1130	R	talk	LE	window display	retail	shop	2.784
F	Broadwick Street	Thursday	0930-1130	R	talk	LE	window display	retail	shop	2.784
F	Broadwick Street	Thursday	0930-1130	R	talk	LE	window display	retail	shop	2.784
F	Broadwick Street	Thursday	1230-1430	N	mobile	LE	window display	retail	shop	2.784
F	Broadwick Street	Thursday	1230-1430	O	eat	LE	window display	retail	shop	2.784
F	Broadwick Street	Thursday	1230-1430	O	eat	LE	window display	retail	shop	2.784
F	Broadwick Street	Thursday	1230-1430	N	wait	SE	pavement edge	transport	edge of street	2.784
F	Broadwick Street	Thursday	1230-1430	N	wait	SE	pavement edge	transport	edge of street	2.784
F	Broadwick Street	Thursday	1230-1430	N	mobile	LE	window display	retail	shop	2.784
F	Broadwick Street	Thursday	1230-1430	O	eat	LE	window display	retail	shop	2.784
F	Broadwick Street	Thursday	1230-1430	O	eat	LE	window display	retail	shop	2.784
F	Broadwick Street	Thursday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	2.784

[illegible]

A	Regent Street I/II	Saturday	0930-1130	R	watch	SE	pavement edge	transport	edge of street	4.159
A	Regent Street I/II	Saturday	0930-1130	N	browse	LE	window display	retail	shop	4.159
A	Regent Street I/II	Saturday	0930-1130	N	browse	LE	window display	retail	shop	4.159
A	Regent Street I/II	Saturday	0930-1130	N	browse	LE	window display	retail	shop	4.159
A	Regent Street I/II	Saturday	0930-1130	O	eat	LE	window display	retail	shop	4.159
A	Regent Street I/II	Saturday	0930-1130	O	eat	LE	window display	retail	shop	4.159
A	Regent Street I/II	Saturday	0930-1130	N	browse	LE	window display	retail	shop	4.159
A	Regent Street I/II	Saturday	0930-1130	N	browse	LE	window display	retail	shop	4.159
A	Regent Street I/II	Saturday	0930-1130	N	browse	LE	window display	retail	shop	4.159
A	Regent Street I/II	Saturday	1230-1430	N	map	LE	window display	retail	shop	4.159
A	Regent Street I/II	Saturday	1230-1430	N	map	LE	window display	retail	shop	4.159
A	Regent Street I/II	Saturday	1230-1430	N	browse	LE	window display	retail	shop	4.159
A	Regent Street I/II	Saturday	1230-1430	N	browse	LE	window display	retail	shop	4.159
A	Regent Street I/II	Saturday	1230-1430	N	browse	LE	window display	retail	shop	4.159
A	Regent Street I/II	Saturday	1230-1430	O	drink	LE	eatory place	catering	bar	4.159
A	Regent Street I/II	Saturday	1230-1430	O	drink	LE	eatory place	catering	bar	4.159
A	Regent Street I/II	Saturday	1230-1430	O	eat	LE	eatory place	catering	bar	4.159
A	Regent Street I/II	Saturday	1230-1430	O	eat	LE	eatory place	catering	bar	4.159
A	Regent Street I/II	Saturday	1230-1430	O	eat	LE	eatory place	catering	bar	4.159
A	Regent Street I/II	Saturday	1230-1430	O	eat	LE	eatory place	catering	bar	4.159
A	Regent Street I/II	Saturday	1230-1430	O	eat	LE	eatory place	catering	bar	4.159
A	Regent Street I/II	Saturday	1230-1430	O	eat	LE	eatory place	catering	bar	4.159
A	Regent Street I/II	Saturday	1230-1430	O	eat	LE	eatory place	catering	bar	4.159
A	Regent Street I/II	Saturday	1230-1430	N	browse	LE	window display	retail	shop	4.159
A	Regent Street I/II	Saturday	1230-1430	N	browse	LE	window display	retail	shop	4.159
A	Regent Street I/II	Saturday	1230-1430	N	browse	LE	window display	retail	shop	4.159
A	Regent Street I/II	Saturday	1230-1430	N	map	LE	public private entrance	retail	entrance	4.159
A	Regent Street I/II	Saturday	1230-1430	N	map	LE	public private entrance	retail	entrance	4.159
A	Regent Street I/II	Saturday	1230-1430	N	mobile	LE	window display	retail	shop	4.159
A	Regent Street I/II	Saturday	1230-1430	N	browse	LE	eatory place	catering	cafe	4.159
A	Regent Street I/II	Saturday	1230-1430	N	browse	LE	eatory place	catering	cafe	4.159
A	Regent Street I/II	Saturday	1230-1430	N	browse	LE	eatory place	catering	cafe	4.159
A	Regent Street I/II	Saturday	1230-1430	N	map	LE	window display	retail	shop	4.159
A	Regent Street I/II	Saturday	1230-1430	N	map	LE	window display	retail	shop	4.159
A	Regent Street I/II	Saturday	1230-1430	R	talk	SE	pavement edge	transport	street fence	4.159
A	Regent Street I/II	Saturday	1230-1430	R	talk	SE	pavement edge	transport	street fence	4.159
A	Regent Street I/II	Saturday	1230-1430	R	talk	SE	pavement edge	transport	street fence	4.159
A	Regent Street I/II	Saturday	1230-1430	R	talk	SE	pavement edge	transport	street fence	4.159
A	Regent Street I/II	Saturday	1230-1430	N	talk	mobile	pavement edge	transport	edge of street	4.159

A	Regent Street I/II	Saturday	1230-1430	R	talk	SE	pavement edge	transport	street fence	4.159
A	Regent Street I/II	Saturday	1230-1430	R	talk	SE	pavement edge	transport	street fence	4.159
A	Regent Street I/II	Saturday	1230-1430	O	eat	LE	window display	retail	shop	4.159
A	Regent Street I/II	Saturday	1230-1430	R	talk	LE	window display	retail	shop	4.159
A	Regent Street I/II	Saturday	1230-1430	R	talk	LE	window display	retail	shop	4.159
A	Regent Street I/II	Saturday	1230-1430	R	talk	LE	window display	retail	shop	4.159
A	Regent Street I/II	Saturday	1230-1430	N	browse	LE	window display	retail	shop	4.159
A	Regent Street I/II	Saturday	1230-1430	R	watch	SE	pavement edge	transport	street fence	4.159
A	Regent Street I/II	Saturday	1230-1430	R	watch	SE	pavement edge	transport	street fence	4.159
A	Regent Street I/II	Saturday	1230-1430	R	watch	SE	pavement edge	transport	street fence	4.159
A	Regent Street I/II	Saturday	1230-1430	R	watch	SE	pavement edge	transport	street fence	4.159
A	Regent Street I/II	Saturday	1230-1430	R	vendor	SE	pavement edge	transport	street fence	4.159
A	Regent Street I/II	Saturday	1230-1430	R	vendor	SE	pavement edge	transport	street fence	4.159
A	Regent Street I/II	Saturday	1230-1430	N	cigar	SE	pavement edge	transport	street fence	4.159
A	Regent Street I/II	Saturday	1230-1430	N	cigar	SE	pavement edge	transport	street fence	4.159
A	Regent Street I/II	Saturday	1230-1430	R	watch	SE	public private entrance	retail	entrance	4.159
A	Regent Street I/II	Saturday	1230-1430	R	watch	SE	public private entrance	retail	entrance	4.159
A	Regent Street I/II	Saturday	1230-1430	R	watch	SE	public private entrance	retail	entrance	4.159
A	Regent Street I/II	Saturday	1230-1430	R	watch	SE	public private entrance	retail	entrance	4.159
A	Regent Street I/II	Saturday	1230-1430	R	watch	SE	public private entrance	retail	entrance	4.159
A	Regent Street I/II	Saturday	1230-1430	R	watch	SE	public private entrance	retail	entrance	4.159
A	Regent Street I/II	Saturday	1230-1430	R	watch	SE	public private entrance	retail	entrance	4.159
A	Regent Street I/II	Saturday	1730-1930	N	wait	SE	pavement edge	transport	edge of street	4.159
A	Regent Street I/II	Saturday	1730-1930	N	wait	SE	pavement edge	transport	edge of street	4.159
A	Regent Street I/II	Saturday	1730-1930	N	browse	LE	eatory place	catering	cafe	4.159
A	Regent Street I/II	Saturday	1730-1930	N	browse	LE	eatory place	catering	cafe	4.159
A	Regent Street I/II	Saturday	1730-1930	N	wait	LE	public private entrance	institution	steps	4.159
A	Regent Street I/II	Saturday	1730-1930	N	wait	LE	public private entrance	institution	steps	4.159
A	Regent Street I/II	Saturday	1730-1930	N	wait	LE	public private entrance	institution	steps	4.159
A	Regent Street I/II	Saturday	1730-1930	N	wait	LE	public private entrance	institution	steps	4.159
A	Regent Street I/II	Saturday	1730-1930	N	wait	LE	public private entrance	institution	steps	4.159
A	Regent Street I/II	Saturday	1730-1930	N	wait	LE	public private entrance	institution	steps	4.159
A	Regent Street I/II	Saturday	1730-1930	N	wait	LE	public private entrance	institution	steps	4.159
A	Regent Street I/II	Saturday	1730-1930	N	wait	LE	cash point	services	bank	4.159
A	Regent Street I/II	Saturday	1730-1930	N	wait	LE	cash point	services	bank	4.159
A	Regent Street I/II	Saturday	1730-1930	N	wait	LE	cash point	services	bank	4.159
A	Regent Street I/II	Saturday	1730-1930	O	drink	LE	eatory place	catering	cafe	4.159
A	Regent Street I/II	Saturday	1730-1930	O	drink	LE	eatory place	catering	cafe	4.159

A	Regent Street I/II	Saturday	1730-1930	O	drink	LE	eatery place	catering	cafe	4.159
A	Regent Street I/II	Saturday	1730-1930	O	drink	LE	eatery place	catering	cafe	4.159
A	Regent Street I/II	Saturday	1730-1930	R	talk	LE	window display	retail	shop	4.159
A	Regent Street I/II	Saturday	1730-1930	R	talk	LE	window display	retail	shop	4.159
A	Regent Street I/II	Saturday	1730-1930	R	talk	LE	window display	retail	shop	4.159
A	Regent Street I/II	Saturday	1730-1930	N	browse	LE	eatery place	catering	cafe	4.159
A	Regent Street I/II	Saturday	1730-1930	N	browse	LE	eatery place	catering	cafe	4.159
A	Regent Street I/II	Saturday	1730-1930	N	wait	LE	pavement edge	transport	edge of street	4.159
A	Regent Street I/II	Saturday	1730-1930	N	wait	LE	pavement edge	transport	edge of street	4.159
A	Regent Street I/II	Saturday	1730-1930	N	browse	LE	window display	retail	shop	4.159
A	Regent Street I/II	Saturday	1730-1930	N	browse	LE	window display	retail	shop	4.159
A	Regent Street I/II	Saturday	1730-1930	N	browse	LE	window display	retail	shop	4.159
A	Regent Street I/II	Saturday	1730-1930	O	drink	LE	eatery place	catering	cafe	4.159
A	Regent Street I/II	Saturday	1730-1930	O	drink	LE	eatery place	catering	cafe	4.159
A	Regent Street I/II	Saturday	1730-1930	O	drink	LE	eatery place	catering	cafe	4.159
A	Regent Street I/II	Saturday	1730-1930	R	watch	LE	window display	retail	shop	4.159
A	Regent Street I/II	Saturday	1730-1930	R	watch	LE	window display	retail	shop	4.159
A	Regent Street I/II	Saturday	1730-1930	N	browse	LE	window display	retail	shop	4.159
A	Regent Street I/II	Saturday	1730-1930	N	browse	LE	window display	retail	shop	4.159
A	Regent Street I/II	Saturday	1730-1930	R	watch	LE	window display	retail	shop	4.159
A	Margaret Street	Saturday	0930-1130	N	wait	LE	cash point	service	bank	3.705
A	Margaret Street	Saturday	0930-1130	N	wait	LE	cash point	service	bank	3.705
A	Margaret Street	Saturday	0930-1130	N	browse	LE	window display	service	hair/beauty	3.705
A	Margaret Street	Saturday	1230-1430	N	wait	LE	public private	retail	entrance	3.705
A	Margaret Street	Saturday	1230-1430	R	talk	LE	pavement edge	transport	edge of street	3.705
A	Margaret Street	Saturday	1230-1430	R	talk	LE	pavement edge	transport	edge of street	3.705
A	Margaret Street	Saturday	1230-1430	N	cigar	SE	public facilities	transport	lamp post	3.705
A	Margaret Street	Saturday	1230-1430	N	wait	SE	pavement edge	transport	edge of street	3.705
A	Margaret Street	Saturday	1230-1430	N	mobile	SE	pavement edge	transport	edge of street	3.705
A	Margaret Street	Saturday	1230-1430	R	talk	LE	pavement edge	transport	edge of street	3.705
A	Margaret Street	Saturday	1230-1430	R	talk	LE	pavement edge	transport	edge of street	3.705
A	Margaret Street	Saturday	1230-1430	N	wait	LE	cash point	service	bank	3.705
A	Margaret Street	Saturday	1230-1430	R	talk	LE	pavement edge	transport	edge of street	3.705
A	Margaret Street	Saturday	1230-1430	R	talk	LE	pavement edge	transport	edge of street	3.705
A	Margaret Street	Saturday	1230-1430	N	browse	LE	window display	retail	shop	3.705
A	Margaret Street	Saturday	1230-1430	N	browse	LE	window display	retail	shop	3.705
A	Margaret Street	Saturday	1230-1430	R	talk	LE	pavement edge	transport	edge of street	3.705
A	Margaret Street	Saturday	1230-1430	R	talk	LE	pavement edge	transport	edge of street	3.705
A	Margaret Street	Saturday	1230-1430	N	wait	LE	public private entrance	retail	entrance	3.705
A	Margaret Street	Saturday	1230-1430	R	talk	LE	pavement edge	transport	edge of street	3.705

A	Margaret Street	Saturday	1230-1430	R	talk	LE	pavement edge	transport	edge of street	3.705
A	Margaret Street	Saturday	1230-1430	R	talk	LE	pavement edge	transport	edge of street	3.705
A	Margaret Street	Saturday	1230-1430	R	talk	LE	pavement edge	transport	edge of street	3.705
A	Margaret Street	Saturday	1730-1930	N	browse	LE	window display	retail	shop	3.705
A	Margaret Street	Saturday	1730-1930	N	browse	LE	window display	retail	shop	3.705
A	Great Castle Street	Saturday	1230-1430	N	browse	LE	eatory place	catering	cafe	2.781
A	Great Castle Street	Saturday	1230-1430	N	browse	LE	eatory place	catering	cafe	2.781
A	Great Castle Street	Saturday	1230-1430	N	wait	LE	cash point	service	bank	2.781
A	Great Castle Street	Saturday	1230-1430	N	cigar	LE	public private entrance	retail	entrance	2.781
A	Great Castle Street	Saturday	1230-1430	R	talk	LE	pavement edge	transport	edge of street	2.781
A	Great Castle Street	Saturday	1230-1430	R	talk	LE	pavement edge	transport	edge of street	2.781
A	Great Castle Street	Saturday	1730-1930	O	drink	LE	eatory place	catering	bar	2.781
A	Great Castle Street	Saturday	1730-1930	O	drink	LE	eatory place	catering	bar	2.781
A	Great Castle Street	Saturday	1730-1930	O	drink	LE	eatory place	catering	bar	2.781
B	New Bond Street	Saturday	0930-1130	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Saturday	0930-1130	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Saturday	0930-1130	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Saturday	0930-1130	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Saturday	0930-1130	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Saturday	0930-1130	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Saturday	0930-1130	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Saturday	0930-1130	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Saturday	0930-1130	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Saturday	0930-1130	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Saturday	0930-1130	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Saturday	0930-1130	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Saturday	0930-1130	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Saturday	0930-1130	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Saturday	0930-1130	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Saturday	0930-1130	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Saturday	0930-1130	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Saturday	0930-1130	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Saturday	0930-1130	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Saturday	0930-1130	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Saturday	0930-1130	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Saturday	0930-1130	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Saturday	0930-1130	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Saturday	0930-1130	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Saturday	0930-1130	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Saturday	0930-1130	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Saturday	0930-1130	N	cigar	BE	public private entrance	retail	entrance	3.139
B	New Bond Street	Saturday	0930-1130	N	browse	LE	window display	retail	shop	3.139



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B	New Bond Street	Saturday	1230-1430	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Saturday	1230-1430	N	mobile	LE	public private entrance	retail	entrance	3.139
B	New Bond Street	Saturday	1730-1130	N	wait	SE	pavement edge	transport	edge of street	3.139
B	New Bond Street	Saturday	1730-1130	N	wait	SE	pavement edge	transport	edge of street	3.139
B	New Bond Street	Saturday	1730-1130	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Saturday	1730-1130	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Saturday	1730-1130	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Saturday	1730-1130	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Saturday	1730-1130	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Saturday	1730-1130	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Saturday	1730-1130	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Saturday	1730-1130	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Saturday	1730-1130	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Saturday	1730-1130	N	browse	LE	window display	retail	shop	3.139
B	New Bond Street	Saturday	1730-1130	R	talk	SE	pavement edge	transport	edge of street	3.139
B	New Bond Street	Saturday	1730-1130	R	talk	SE	pavement edge	transport	edge of street	3.139
B	New Bond Street	Saturday	1730-1130	R	talk	SE	end of street	transport	junction	3.139
B	New Bond Street	Saturday	1730-1130	R	talk	SE	end of street	transport	junction	3.139
B	Maddox Street	Saturday	0930-1130	R	talk	SE	pavement edge	transport	edge of street	2.397
B	Maddox Street	Saturday	0930-1130	R	talk	SE	pavement edge	transport	edge of street	2.397
B	Maddox Street	Saturday	0930-1130	R	watch	LE	window display	retail	shop	2.397
B	Maddox Street	Saturday	1230-1430	N	browse	LE	eatory place	catering	cafe	2.397
B	Maddox Street	Saturday	1230-1430	N	browse	LE	eatory place	catering	cafe	2.397
B	Maddox Street	Saturday	1230-1430	N	mobile	LE	public private entrance	retail	entrance	2.397
B	Maddox Street	Saturday	1230-1430	N	browse	LE	eatory place	catering	restaurant	2.397
B	Maddox Street	Saturday	1230-1430	N	mobile	LE	pavement edge	transport	edge of street	2.397
B	Maddox Street	Saturday	1230-1430	R	talk	LE	pavement edge	transport	edge of street	2.397
B	Maddox Street	Saturday	1230-1430	R	talk	LE	pavement edge	transport	edge of street	2.397
B	Maddox Street	Saturday	1230-1430	N	cigar	LE	pavement edge	transport	edge of street	2.397
B	Maddox Street	Saturday	1230-1430	R	talk	LE	pavement edge	transport	edge of street	2.397
B	Maddox Street	Saturday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	2.397
B	Maddox Street	Saturday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	2.397
B	Maddox Street	Saturday	1230-1430	N	browse	LE	window display	retail	shop	2.397
B	Maddox Street	Saturday	1230-1430	N	cigar	BE	building facade	retail	basement fence	2.397
B	Maddox Street	Saturday	1230-1430	N	browse	LE	window display	retail	shop	2.397
B	Maddox Street	Saturday	1230-1430	N	browse	LE	window display	retail	shop	2.397
B	Maddox Street	Saturday	1230-1430	N	browse	LE	window display	retail	shop	2.397
B	Maddox Street	Saturday	1230-1430	N	wait	SE	pavement edge	transport	edge of street	2.397
B	Maddox Street	Saturday	1230-1430	O	drink	SE	pavement edge	transport	edge of street	2.397
B	Maddox Street	Saturday	1230-1430	N	talk	BE	public private entrance	retail	entrance	2.397
B	Maddox Street	Saturday	1230-1430	N	talk	BE	public private entrance	retail	entrance	2.397
B	Maddox Street	Saturday	1230-1430	N	talk	BE	public private entrance	retail	entrance	2.397

B	Maddox Street	Saturday	1230-1430	N	talk	BE	public private entrance	retail	entrance	2.397
B	Maddox Street	Saturday	1230-1430	N	mobile	LE	window display	retail	shop	2.397
B	Maddox Street	Saturday	1230-1430	N	browse	LE	news agent	retail	quick shop	2.397
B	Maddox Street	Saturday	1230-1430	N	mobile	BE	public private entrance	retail	entrance	2.397
B	Maddox Street	Saturday	1230-1430	N	wait	LE	window display	retail	shop	2.397
B	Maddox Street	Saturday	1230-1430	R	talk	LE	window display	retail	shop	2.397
B	Maddox Street	Saturday	1230-1430	R	talk	LE	window display	retail	shop	2.397
B	Maddox Street	Saturday	1230-1430	R	talk	LE	window display	retail	shop	2.397
B	Maddox Street	Saturday	1230-1430	R	talk	LE	window display	retail	shop	2.397
B	Maddox Street	Saturday	1230-1430	R	talk	LE	window display	retail	shop	2.397
B	Maddox Street	Saturday	1230-1430	R	talk	BE	building facade	retail	indent of building	2.397
B	Maddox Street	Saturday	1230-1430	R	talk	BE	building facade	retail	indent of building	2.397
B	Old Burlington Street	Saturday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	1.833
B	Old Burlington Street	Saturday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	1.833
B	Old Burlington Street	Saturday	1230-1430	N	mobile	LE	window display	retail	shop	1.833
B	Old Burlington Street	Saturday	1230-1430	N	cigar	BE	public private entrance	retail	entrance	1.833
B	Old Burlington Street	Saturday	1230-1430	N	browse	LE	window display	retail	shop	1.833
B	Old Burlington Street	Saturday	1230-1430	N	browse	LE	window display	retail	shop	1.833
C	Regent Street III/IV	Saturday	0930-1130	N	browse	LE	window display	retail	shop	3.317
C	Regent Street III/IV	Saturday	0930-1130	N	browse	LE	window display	retail	shop	3.317
C	Regent Street III/IV	Saturday	0930-1130	N	browse	LE	window display	retail	shop	3.317
C	Regent Street III/IV	Saturday	0930-1130	N	browse	LE	window display	retail	shop	3.317
C	Regent Street III/IV	Saturday	0930-1130	N	browse	LE	window display	retail	shop	3.317
C	Regent Street III/IV	Saturday	0930-1130	N	wait	LE	cash point	service	bank	3.317
C	Regent Street III/IV	Saturday	0930-1130	N	wait	LE	cash point	service	bank	3.317
C	Regent Street III/IV	Saturday	0930-1130	N	wait	LE	cash point	service	bank	3.317
C	Regent Street III/IV	Saturday	0930-1130	N	wait	LE	cash point	service	bank	3.317
C	Regent Street III/IV	Saturday	0930-1130	N	wait	LE	cash point	service	bank	3.317
C	Regent Street III/IV	Saturday	0930-1130	N	wait	LE	cash point	service	bank	3.317
C	Regent Street III/IV	Saturday	0930-1130	N	wait	LE	cash point	service	bank	3.317
C	Regent Street III/IV	Saturday	0930-1130	N	browse	LE	window display	retail	shop	3.317
C	Regent Street III/IV	Saturday	0930-1130	N	browse	LE	window display	retail	shop	3.317
C	Regent Street III/IV	Saturday	0930-1130	N	map	BE	public private entrance	retail	entrance	3.317
C	Regent Street III/IV	Saturday	0930-1130	R	talk	SE	pavement edge	transport	edge of street	3.317
C	Regent Street III/IV	Saturday	0930-1130	R	talk	SE	pavement edge	transport	edge of street	3.317
C	Regent Street III/IV	Saturday	0930-1130	R	vendor	SE	end of street	transport	junction	3.317
C	Regent Street III/IV	Saturday	0930-1130	R	vendor	SE	end of street	transport	junction	3.317
C	Regent Street III/IV	Saturday	0930-1130	N	map	SE	end of street	transport	junction	3.317
C	Regent Street III/IV	Saturday	0930-1130	N	map	SE	end of street	transport	junction	3.317
C	Regent Street III/IV	Saturday	0930-1130	N	browse	LE	window display	retail	shop	3.317

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C	Conduit Street	Saturday	1230-1430	O	eat	LE	window display	retail	shop	3.301
C	Conduit Street	Saturday	1230-1430	O	eat	LE	window display	retail	shop	3.301
C	Conduit Street	Saturday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	3.301
C	Conduit Street	Saturday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	3.301
C	Conduit Street	Saturday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	3.301
C	Conduit Street	Saturday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	3.301
C	Hanover Street	Saturday	0930-1130	R	talk	LE	eatery place	catering	restaurant	2.485
C	Hanover Street	Saturday	0930-1130	R	talk	LE	eatery place	catering	restaurant	2.485
C	Hanover Street	Saturday	0930-1130	R	talk	LE	eatery place	catering	restaurant	2.485
C	Hanover Street	Saturday	0930-1130	R	talk	SE	pavement edge	transport	edge of street	2.485
C	Hanover Street	Saturday	0930-1130	R	talk	SE	pavement edge	transport	edge of street	2.485
C	Hanover Street	Saturday	0930-1130	N	browse	LE	window display	retail	shop	2.485
C	Hanover Street	Saturday	1230-1430	N	mobile	LE	pavement edge	transport	edge of street	2.485
C	Hanover Street	Saturday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	2.485
C	Hanover Street	Saturday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	2.485
C	Hanover Street	Saturday	1230-1430	N	mobile	BE	public private entrance	office	entrance	2.485
C	Hanover Street	Saturday	1230-1430	N	mobile	BE	public private entrance	office	entrance	2.485
C	Hanover Street	Saturday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	2.485
C	Hanover Street	Saturday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	2.485
C	Hanover Street	Saturday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	2.485
C	Hanover Street	Saturday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	2.485
C	Hanover Street	Saturday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	2.485
C	Hanover Street	Saturday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	2.485
C	Hanover Street	Saturday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	2.485
C	Hanover Street	Saturday	1230-1430	R	talk	LE	window display	retail	shop	2.485
C	Hanover Street	Saturday	1230-1430	R	talk	LE	window display	retail	shop	2.485
C	Hanover Street	Saturday	1230-1430	R	talk	LE	window display	retail	shop	2.485
C	Hanover Street	Saturday	1230-1430	N	mobile	LE	eatery place	catering	cafe	2.485
C	Hanover Street	Saturday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	2.485
C	Hanover Street	Saturday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	2.485
C	Hanover Street	Saturday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	2.485
C	Hanover Street	Saturday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	2.485
C	Hanover Street	Saturday	1230-1430	O	drink	LE	eatery place	catering	cafe	2.485
C	Hanover Street	Saturday	1230-1430	O	drink	LE	eatery place	catering	cafe	2.485
C	Hanover Street	Saturday	1230-1430	N	mobile	LE	cash point	service	bank	2.485
C	Hanover Street	Saturday	1230-1430	N	mobile	LE	cash point	service	bank	2.485
C	Hanover Street	Saturday	1230-1430	N	mobile	LE	cash point	service	bank	2.485
C	Hanover Street	Saturday	1230-1430	N	mobile	LE	cash point	service	bank	2.485
C	Hanover Street	Saturday	1730-1930	N	mobile	LE	cash point	service	bank	2.485
C	Hanover Street	Saturday	1730-1930	N	mobile	LE	cash point	service	bank	2.485

C	Hanover Street	Saturday	1730-1930	N	mobile	LE	cash point	service	bank	2.485
C	Hanover Street	Saturday	1730-1930	O	eat	LE	eatory place	catering	restaurant	2.485
C	Hanover Street	Saturday	1730-1930	O	eat	LE	eatory place	catering	restaurant	2.485
C	Hanover Street	Saturday	1730-1930	O	eat	LE	eatory place	catering	restaurant	2.485
C	Hanover Street	Saturday	1730-1930	O	eat	LE	eatory place	catering	restaurant	2.485
C	Hanover Street	Saturday	1730-1930	O	eat	LE	eatory place	catering	restaurant	2.485
C	Hanover Street	Saturday	1730-1930	O	eat	LE	eatory place	catering	restaurant	2.485
C	Hanover Street	Saturday	1730-1930	N	mobile	BE	building facade	retail	indent of building	2.485
C	Hanover Street	Saturday	1730-1930	N	wait	LE	cash point	service	bank	2.485
D	Regent Street V	Saturday	0930-1130	N	wait	BE	building facade	retail	indent of building	3.883
D	Regent Street V	Saturday	0930-1130	N	wait	BE	building facade	retail	indent of building	3.883
D	Regent Street V	Saturday	0930-1130	N	wait	BE	building facade	retail	indent of building	3.883
D	Regent Street V	Saturday	0930-1130	N	wait	BE	public private entrance	retail	entrance	3.883
D	Regent Street V	Saturday	0930-1130	N	wait	BE	public private entrance	retail	entrance	3.883
D	Regent Street V	Saturday	0930-1130	N	wait	BE	public private entrance	retail	entrance	3.883
D	Regent Street V	Saturday	0930-1130	N	wait	BE	public private entrance	retail	entrance	3.883
D	Regent Street V	Saturday	0930-1130	R	watch	BE	building facade	retail	indent of building	3.883
D	Regent Street V	Saturday	0930-1130	N	mobile	LE	window display	retail	shop	3.883
D	Regent Street V	Saturday	0930-1130	N	browse	LE	window display	retail	shop	3.883
D	Regent Street V	Saturday	0930-1130	N	browse	LE	window display	retail	shop	3.883
D	Regent Street V	Saturday	0930-1130	N	browse	LE	window display	retail	shop	3.883
D	Regent Street V	Saturday	0930-1130	N	browse	LE	window display	retail	shop	3.883
D	Regent Street V	Saturday	0930-1130	N	browse	LE	window display	retail	shop	3.883
D	Regent Street V	Saturday	0930-1130	N	mobile	BE	public private entrance	retail	entrance	3.883
D	Regent Street V	Saturday	0930-1130	R	watch	LE	window display	retail	shop	3.883
D	Regent Street V	Saturday	0930-1130	N	browse	LE	window display	retail	shop	3.883
D	Regent Street V	Saturday	0930-1130	N	browse	LE	window display	retail	shop	3.883
D	Regent Street V	Saturday	0930-1130	N	browse	LE	window display	retail	shop	3.883
D	Regent Street V	Saturday	0930-1130	N	cigar	BE	public private entrance	retail	entrance	3.883
D	Regent Street V	Saturday	0930-1130	N	map	SE	pavement edge	transport	edge of street	3.883
D	Regent Street V	Saturday	1230-1430	N	browse	LE	window display	retail	shop	3.883
D	Regent Street V	Saturday	1230-1430	N	browse	LE	window display	retail	shop	3.883
D	Regent Street V	Saturday	1230-1430	N	browse	LE	window display	retail	shop	3.883
D	Regent Street V	Saturday	1230-1430	N	browse	LE	window display	retail	shop	3.883
D	Regent Street V	Saturday	1230-1430	N	browse	LE	window display	retail	shop	3.883
D	Regent Street V	Saturday	1230-1430	N	browse	LE	window display	retail	shop	3.883
D	Regent Street V	Saturday	1230-1430	N	browse	LE	window display	retail	shop	3.883
D	Regent Street V	Saturday	1230-1430	N	browse	LE	window display	retail	shop	3.883
D	Regent Street V	Saturday	1230-1430	R	talk	LE	window display	retail	shop	3.883

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D	Regent Street V	Saturday	1230-1430	N	browse	LE	window display	retail	shop	3.883
D	Regent Street V	Saturday	1230-1430	N	browse	LE	window display	retail	shop	3.883
D	Regent Street V	Saturday	1230-1430	N	browse	LE	window display	retail	shop	3.883
D	Regent Street V	Saturday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	3.883
D	Regent Street V	Saturday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	3.883
D	Regent Street V	Saturday	1730-1930	N	map	SE	pavement edge	transport	edge of street	3.883
D	Regent Street V	Saturday	1730-1930	N	map	SE	pavement edge	transport	edge of street	3.883
D	Regent Street V	Saturday	1730-1930	N	wait	SE	pavement edge	transport	edge of street	3.883
D	Regent Street V	Saturday	1730-1930	N	browse	LE	window display	retail	shop	3.883
D	Regent Street V	Saturday	1730-1930	N	browse	LE	window display	retail	shop	3.883
D	Regent Street V	Saturday	1730-1930	N	browse	LE	window display	retail	shop	3.883
D	Regent Street V	Saturday	1730-1930	N	browse	LE	window display	retail	shop	3.883
D	Regent Street V	Saturday	1730-1930	N	mobile	LE	window display	retail	shop	3.883
D	Regent Street V	Saturday	1730-1930	N	cigar	BE	public private entrance	retail	entrance	3.883
D	Regent Street V	Saturday	1730-1930	N	wait	SE	pavement edge	transport	edge of street	3.883
D	Regent Street V	Saturday	1730-1930	N	browse	LE	window display	retail	shop	3.883
D	Regent Street V	Saturday	1730-1930	N	browse	LE	window display	retail	shop	3.883
D	Regent Street V	Saturday	1730-1930	N	browse	LE	window display	retail	shop	3.883
D	Regent Street V	Saturday	1730-1930	N	browse	LE	window display	retail	shop	3.883
D	Regent Street V	Saturday	1730-1930	N	browse	LE	window display	retail	shop	3.883
D	Regent Street V	Saturday	1730-1930	N	browse	LE	window display	retail	shop	3.883
D	Regent Street V	Saturday	1730-1930	N	cigar	BE	public private entrance	retail	entrance	3.883
D	Regent Street V	Saturday	1730-1930	N	browse	LE	window display	retail	shop	3.883
D	Regent Street V	Saturday	1730-1930	N	mobile	SE	pavement edge	transport	edge of street	3.883
D	Regent Street V	Saturday	1730-1930	N	wait	SE	pavement edge	transport	edge of street	3.883
D	Regent Street V	Saturday	1730-1930	N	browse	LE	window display	retail	shop	3.883
D	Regent Street V	Saturday	1730-1930	N	browse	LE	window display	retail	shop	3.883
D	Regent Street V	Saturday	1730-1930	N	browse	LE	window display	retail	shop	3.883
D	Gt Marlborough Street	Saturday	0930-1130	N	mobile	BE	public private entrance	retail	entrance	2.805
D	Gt Marlborough Street	Saturday	0930-1130	N	mobile	BE	public private entrance	retail	entrance	2.805
D	Gt Marlborough Street	Saturday	0930-1130	O	drink	LE	eatery place	catering	cafe	2.805
D	Gt Marlborough Street	Saturday	0930-1130	O	drink	LE	eatery place	catering	cafe	2.805
D	Gt Marlborough Street	Saturday	0930-1130	O	drink	LE	eatery place	catering	cafe	2.805
D	Gt Marlborough Street	Saturday	0930-1130	N	cigar	BE	building facade	retail	building indent	2.805
D	Gt Marlborough Street	Saturday	0930-1130	N	cigar	BE	building facade	retail	building indent	2.805
D	Gt Marlborough Street	Saturday	0930-1130	N	map	SE	end of street	transport	junction	2.805
D	Gt Marlborough Street	Saturday	0930-1130	R	talk	SE	pavement edge	transport	edge of street	2.805
D	Gt Marlborough Street	Saturday	0930-1130	R	talk	SE	pavement edge	transport	edge of street	2.805
D	Gt Marlborough Street	Saturday	0930-1130	N	cigar	BE	building facade	retail	building indent	2.805
D	Gt Marlborough Street	Saturday	0930-1130	N	mobile	SE	pavement edge	transport	edge of street	2.805

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D	Gt Marlborough Street	Saturday	1730-1930	N	wait	SE	pavement edge	transport	edge of street	2.805
D	Gt Marlborough Street	Saturday	1730-1930	N	wait	SE	pavement edge	transport	edge of street	2.805
D	Gt Marlborough Street	Saturday	1730-1930	R	talk	LE	eatery place	catering	restaurant	2.805
D	Gt Marlborough Street	Saturday	1730-1930	R	talk	LE	eatery place	catering	restaurant	2.805
D	Gt Marlborough Street	Saturday	1730-1930	R	talk	LE	eatery place	catering	restaurant	2.805
D	Gt Marlborough Street	Saturday	1730-1930	R	talk	LE	eatery place	catering	restaurant	2.805
D	Gt Marlborough Street	Saturday	1730-1930	R	talk	LE	eatery place	catering	restaurant	2.805
D	Gt Marlborough Street	Saturday	1730-1930	R	talk	LE	eatery place	catering	restaurant	2.805
D	Gt Marlborough Street	Saturday	1730-1930	R	talk	LE	eatery place	catering	restaurant	2.805
D	Gt Marlborough Street	Saturday	1730-1930	R	talk	LE	eatery place	catering	restaurant	2.805
D	Kingly Street	Saturday	0930-1130	N	mobile	BE	building facade	retail	indent of building	2.524
D	Kingly Street	Saturday	0930-1130	N	cigar	BE	building facade	retail	indent of building	2.524
D	Kingly Street	Saturday	1230-1430	N	mobile	BE	public private entrance	retail	entrance	2.524
D	Kingly Street	Saturday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	2.524
D	Kingly Street	Saturday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	2.524
D	Kingly Street	Saturday	1230-1430	N	browse	LE	window display	retail	shop	2.524
D	Kingly Street	Saturday	1230-1430	N	browse	LE	window display	retail	shop	2.524
D	Kingly Street	Saturday	1230-1430	N	mobile	SE	pavement edge	transport	transport	2.524
D	Kingly Street	Saturday	1230-1430	N	browse	LE	window display	retail	shop	2.524
D	Kingly Street	Saturday	1730-1930	N	cigar	BE	building facade	retail	indent of building	2.524
D	Kingly Street	Saturday	1730-1930	R	talk	BE	building facade	retail	indent of building	2.524
D	Kingly Street	Saturday	1730-1930	R	talk	BE	building facade	retail	indent of building	2.524
D	Kingly Street	Saturday	1730-1930	N	mobile	BE	public private entrance	retail	entrance	2.524
D	Kingly Street	Saturday	1730-1930	N	mobile	BE	public private entrance	retail	entrance	2.524
E	Regent Street VI/VII	Saturday	0930-1130	N	browse	LE	window display	retail	shop	3.022
E	Regent Street VI/VII	Saturday	0930-1130	N	browse	LE	window display	retail	shop	3.022
E	Regent Street VI/VII	Saturday	0930-1130	N	browse	LE	window display	retail	shop	3.022
E	Regent Street VI/VII	Saturday	0930-1130	N	browse	LE	window display	retail	shop	3.022
E	Regent Street VI/VII	Saturday	0930-1130	N	browse	LE	window display	retail	shop	3.022
E	Regent Street VI/VII	Saturday	0930-1130	N	cigar	BE	public private entrance	retail	entrance	3.022
E	Regent Street VI/VII	Saturday	0930-1130	N	browse	LE	window display	retail	shop	3.022
E	Regent Street VI/VII	Saturday	0930-1130	N	browse	LE	window display	retail	shop	3.022
E	Regent Street VI/VII	Saturday	0930-1130	N	browse	LE	window display	retail	shop	3.022
E	Regent Street VI/VII	Saturday	0930-1130	N	browse	LE	window display	retail	shop	3.022
E	Regent Street VI/VII	Saturday	0930-1130	N	browse	LE	window display	retail	shop	3.022
E	Regent Street VI/VII	Saturday	0930-1130	N	browse	LE	window display	retail	shop	3.022
E	Regent Street VI/VII	Saturday	0930-1130	N	mobile	BE	public private entrance	retail	entrance	3.022
E	Regent Street VI/VII	Saturday	0930-1130	N	browse	LE	window display	retail	shop	3.022
E	Regent Street VI/VII	Saturday	0930-1130	N	map	SE	pavement edge	transport	edge of street	3.022
E	Regent Street VI/VII	Saturday	0930-1130	N	map	LE	window display	retail	shop	3.022

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E	Regent Street VI/VII	Saturday	1230-1430	N	wait	BE	public private entrance	retail	entrance	3.022
E	Regent Street VI/VII	Saturday	1230-1430	N	wait	BE	public private entrance	retail	entrance	3.022
E	Regent Street VI/VII	Saturday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	3.022
E	Regent Street VI/VII	Saturday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	3.022
E	Regent Street VI/VII	Saturday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	3.022
E	Regent Street VI/VII	Saturday	1230-1430	N	mobile	SE	pavement edge	transport	edge of street	3.022
E	Regent Street VI/VII	Saturday	1730-1930	N	browse	LE	window display	retail	shop	3.022
E	Regent Street VI/VII	Saturday	1730-1930	N	browse	LE	window display	retail	shop	3.022
E	Regent Street VI/VII	Saturday	1730-1930	N	browse	LE	window display	retail	shop	3.022
E	Regent Street VI/VII	Saturday	1730-1930	N	browse	LE	window display	retail	shop	3.022
E	Regent Street VI/VII	Saturday	1730-1930	N	browse	LE	window display	retail	shop	3.022
E	Regent Street VI/VII	Saturday	1730-1930	N	browse	LE	window display	retail	shop	3.022
E	Regent Street VI/VII	Saturday	1730-1930	N	browse	LE	window display	retail	shop	3.022
E	Regent Street VI/VII	Saturday	1730-1930	N	browse	LE	window display	retail	shop	3.022
E	Regent Street VI/VII	Saturday	1730-1930	N	browse	LE	window display	retail	shop	3.022
E	Regent Street VI/VII	Saturday	1730-1930	R	vendor	SE	pavement edge	transport	edge of street	3.022
E	Regent Street VI/VII	Saturday	1730-1930	R	watch	LE	window display	retail	shop	3.022
E	Regent Street VI/VII	Saturday	1730-1930	R	talk	BE	building facade	retail	indent of building	3.022
E	Regent Street VI/VII	Saturday	1730-1930	R	talk	BE	building facade	retail	indent of building	3.022
E	Regent Street VI/VII	Saturday	1730-1930	R	talk	BE	building facade	retail	indent of building	3.022
E	Regent Street VI/VII	Saturday	1730-1930	N	cigar	BE	building facade	retail	indent of building	3.022
E	Regent Street VI/VII	Saturday	1730-1930	N	browse	LE	window display	retail	shop	3.022
E	Regent Street VI/VII	Saturday	1730-1930	N	browse	LE	window display	retail	shop	3.022
E	Regent Street VI/VII	Saturday	1730-1930	R	vendor	SE	pavement edge	transport	edge of street	3.022
E	Regent Street VI/VII	Saturday	1730-1930	N	browse	LE	window display	retail	shop	3.022
E	Regent Street VI/VII	Saturday	1730-1930	N	browse	LE	window display	retail	shop	3.022
E	Regent Street VI/VII	Saturday	1730-1930	N	browse	LE	window display	retail	shop	3.022
E	Regent Street VI/VII	Saturday	1730-1930	N	browse	LE	window display	retail	shop	3.022
E	Regent Street VI/VII	Saturday	1730-1930	N	browse	LE	window display	retail	shop	3.022
E	Beak street	Saturday	0930-1130	N	map	SE	pavement edge	transport	edge of street	2.877
E	Beak street	Saturday	0930-1130	N	map	SE	pavement edge	transport	edge of street	2.877
E	Beak street	Saturday	0930-1130	R	talk	SE	end of street	transport	junction	2.877
E	Beak street	Saturday	0930-1130	R	talk	SE	end of street	transport	junction	2.877
E	Beak street	Saturday	0930-1130	N	cigar	SE	pavement edge	transport	street barrier	2.877
E	Beak street	Saturday	1230-1430	N	browse	LE	window display	retail	shop	2.877
E	Beak street	Saturday	1230-1430	N	browse	LE	window display	retail	shop	2.877
E	Beak street	Saturday	1230-1430	N	browse	LE	window display	retail	shop	2.877
E	Beak street	Saturday	1230-1430	N	browse	LE	window display	retail	shop	2.877
E	Beak street	Saturday	1230-1430	N	browse	LE	window display	retail	shop	2.877

E	Beak street	Saturday	1230-1430	N	browse	LE	window display	retail	shop	2.877
E	Beak street	Saturday	1230-1430	N	browse	LE	window display	retail	shop	2.877
E	Beak street	Saturday	1230-1430	N	browse	LE	window display	retail	shop	2.877
E	Beak street	Saturday	1230-1430	N	wait	BE	public private entrance	retail	entrance	2.877
E	Beak street	Saturday	1230-1430	R	talk	LE	window display	retail	shop	2.877
E	Beak street	Saturday	1230-1430	R	talk	LE	window display	retail	shop	2.877
E	Beak street	Saturday	1230-1430	R	talk	LE	window display	retail	shop	2.877
E	Beak street	Saturday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	2.877
E	Beak street	Saturday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	2.877
E	Beak street	Saturday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	2.877
E	Beak street	Saturday	1230-1430	R	talk	SE	pavement edge	transport	edge of street	2.877
E	Beak street	Saturday	1230-1430	R	talk	BE	public private entrance	retail	entrance	2.877
E	Beak street	Saturday	1730-1930	O	drink	LE	eatery place	catering	pub	2.877
E	Beak street	Saturday	1730-1930	N	mobile	LE	eatery place	catering	pub	2.877
E	Beak street	Saturday	1730-1930	N	mobile	BE	public private entrance	retail	entrance	2.877
E	Beak street	Saturday	1730-1930	N	mobile	SE	pavement edge	transport	edge of street	2.877
E	Beak street	Saturday	1730-1930	R	talk	SE	pavement edge	transport	edge of street	2.877
E	Beak street	Saturday	1730-1930	R	talk	SE	pavement edge	transport	edge of street	2.877
E	Brewer Street	Saturday	0930-1130	N	browse	LE	news agent	retail	quick shop	2.252
E	Brewer Street	Saturday	0930-1130	N	browse	LE	eatery place	catering	cafe	2.252
E	Brewer Street	Saturday	0930-1130	R	talk	BE	public private entrance	retail	entrance	2.252
E	Brewer Street	Saturday	0930-1130	R	talk	BE	public private entrance	retail	entrance	2.252
E	Brewer Street	Saturday	0930-1130	N	browse	LE	window display	retail	shop	2.252
E	Brewer Street	Saturday	0930-1130	N	browse	LE	eatery place	catering	cafe	2.252
E	Brewer Street	Saturday	0930-1130	N	map	SE	pavement edge	transport	edge of street	2.252
E	Brewer Street	Saturday	0930-1130	N	map	SE	pavement edge	transport	edge of street	2.252
E	Brewer Street	Saturday	0930-1130	R	talk	SE	pavement edge	transport	edge of street	2.252
E	Brewer Street	Saturday	0930-1130	R	talk	SE	pavement edge	transport	edge of street	2.252
E	Brewer Street	Saturday	0930-1130	R	watch	SE	pavement edge	transport	edge of street	2.252
E	Brewer Street	Saturday	0930-1130	R	watch	SE	pavement edge	transport	edge of street	2.252
E	Brewer Street	Saturday	0930-1130	R	watch	SE	pavement edge	transport	edge of street	2.252
E	Brewer Street	Saturday	0930-1130	R	watch	SE	pavement edge	transport	edge of street	2.252
E	Brewer Street	Saturday	0930-1130	N	browse	LE	eatery place	catering	cafe	2.252
E	Brewer Street	Saturday	0930-1130	N	browse	LE	eatery place	catering	cafe	2.252
E	Brewer Street	Saturday	0930-1130	N	browse	LE	eatery place	catering	cafe	2.252
E	Brewer Street	Saturday	0930-1130	R	watch	LE	window display	retail	shop	2.252
E	Brewer Street	Saturday	0930-1130	R	watch	LE	window display	retail	shop	2.252
E	Brewer Street	Saturday	0930-1130	R	watch	LE	window display	retail	shop	2.252
E	Brewer Street	Saturday	0930-1130	R	watch	LE	window display	retail	shop	2.252
E	Brewer Street	Saturday	0930-1130	R	watch	LE	window display	retail	shop	2.252

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E	Brewer Street	Saturday	1230-1430	N	mobile	LE	window display	retail	shop	2.252
E	Brewer Street	Saturday	1230-1430	N	wait	SE	pavement edge	transport	edge of street	2.252
E	Brewer Street	Saturday	1230-1430	N	wait	SE	pavement edge	transport	edge of street	2.252
E	Brewer Street	Saturday	1230-1430	N	mobile	SE	pavement edge	transport	edge of street	2.252
E	Brewer Street	Saturday	1230-1430	N	cigar	LE	window display	retail	shop	2.252
E	Brewer Street	Saturday	1230-1430	R	talk	LE	window display	retail	shop	2.252
E	Brewer Street	Saturday	1230-1430	R	talk	LE	window display	retail	shop	2.252
E	Brewer Street	Saturday	1230-1430	N	browse	LE	window display	retail	shop	2.252
E	Brewer Street	Saturday	1230-1430	N	browse	LE	window display	retail	shop	2.252
E	Brewer Street	Saturday	1230-1430	N	browse	LE	window display	retail	shop	2.252
E	Brewer Street	Saturday	1230-1430	N	browse	LE	window display	retail	shop	2.252
E	Brewer Street	Saturday	1730-1930	N	browse	LE	eatory place	catering	restaurant	2.252
E	Brewer Street	Saturday	1730-1930	N	browse	LE	eatory place	catering	restaurant	2.252
E	Brewer Street	Saturday	1730-1930	N	wait	LE	window display	retail	hotel	2.252
E	Brewer Street	Saturday	1730-1930	N	browse	LE	window display	retail	shop	2.252
E	Brewer Street	Saturday	1730-1930	N	browse	LE	eatory place	catering	restaurant	2.252
E	Brewer Street	Saturday	1730-1930	N	browse	LE	eatory place	catering	restaurant	2.252
E	Brewer Street	Saturday	1730-1930	N	browse	LE	eatory place	catering	restaurant	2.252
E	Brewer Street	Saturday	1730-1930	N	wait	LE	eatory place	catering	restaurant	2.252
E	Brewer Street	Saturday	1730-1930	R	talk	LE	eatory place	catering	restaurant	2.252
E	Brewer Street	Saturday	1730-1930	R	talk	LE	eatory place	catering	restaurant	2.252
E	Brewer Street	Saturday	1730-1930	R	talk	LE	eatory place	catering	restaurant	2.252
E	Brewer Street	Saturday	1730-1930	R	talk	LE	eatory place	catering	pub	2.252
E	Brewer Street	Saturday	1730-1930	R	talk	LE	eatory place	catering	pub	2.252
E	Brewer Street	Saturday	1730-1930	R	talk	SE	pavement edge	transport	edge of street	2.252
E	Brewer Street	Saturday	1730-1930	R	talk	SE	pavement edge	transport	edge of street	2.252
F	Wardour Street	Saturday	0930-1130	R	talk	LE	eatory place	catering	restaurant	3.238
F	Wardour Street	Saturday	0930-1130	R	talk	LE	catering	catering	restaurant	3.238
F	Wardour Street	Saturday	0930-1130	N	browse	LE	window display	retail	shop	3.238
F	Wardour Street	Saturday	0930-1130	N	browse	LE	window display	retail	shop	3.238
F	Wardour Street	Saturday	0930-1130	N	browse	LE	window display	retail	shop	3.238
F	Wardour Street	Saturday	0930-1130	R	watch	SE	pavement edge	transport	street barrier	3.238
F	Wardour Street	Saturday	0930-1130	R	talk	SE	pavement edge	transport	street barrier	3.238
F	Wardour Street	Saturday	0930-1130	R	talk	SE	pavement edge	transport	street barrier	3.238
F	Wardour Street	Saturday	0930-1130	N	browse	LE	window display	retail	shop	3.238
F	Wardour Street	Saturday	0930-1130	N	cigar	LE	public private entrance	retail	shop	3.238
F	Wardour Street	Saturday	0930-1130	R	talk	SE	pavement edge	transport	street barrier	3.238
F	Wardour Street	Saturday	0930-1130	R	talk	SE	pavement edge	transport	street barrier	3.238
F	Wardour Street	Saturday	0930-1130	N	browse	LE	window display	retail	shop	3.238

F	Wardour Street	Saturday	0930-1130	R	talk	LE	window display	retail	shop	3.238
F	Wardour Street	Saturday	0930-1130	R	talk	LE	window display	retail	shop	3.238
F	Wardour Street	Saturday	0930-1130	N	mobile	LE	window display	retail	shop	3.238
F	Wardour Street	Saturday	0930-1130	N	browse	LE	window display	retail	shop	3.238
F	Wardour Street	Saturday	0930-1130	R	talk	LE	eatery place	catering	cafe	3.238
F	Wardour Street	Saturday	0930-1130	R	talk	LE	eatery place	catering	cafe	3.238
F	Wardour Street	Saturday	0930-1130	N	map	SE	pavement edge	transport	edge of street	3.238
F	Wardour Street	Saturday	0930-1130	N	map	SE	pavement edge	transport	edge of street	3.238
F	Wardour Street	Saturday	0930-1130	R	talk	LE	eatery place	catering	restaurant	3.238
F	Wardour Street	Saturday	0930-1130	R	talk	LE	eatery place	catering	restaurant	3.238
F	Wardour Street	Saturday	0930-1130	R	talk	BE	public private entrance	retail	entrance	3.238
F	Wardour Street	Saturday	0930-1130	R	talk	BE	public private entrance	retail	entrance	3.238
F	Wardour Street	Saturday	0930-1130	N	cigar	LE	eatery place	catering	entrance	3.238
F	Wardour Street	Saturday	0930-1130	R	watch	LE	eatery place	catering	cafe	3.238
F	Wardour Street	Saturday	0930-1130	N	browse	LE	eatery place	catering	cafe	3.238
F	Wardour Street	Saturday	0930-1130	O	drink	LE	eatery place	catering	cafe	3.238
F	Wardour Street	Saturday	1230-1430	R	watch	SE	pavement edge	transport	edge of street	3.238
F	Wardour Street	Saturday	1230-1430	N	mobile	SE	pavement edge	transport	edge of street	3.238
F	Wardour Street	Saturday	1230-1430	N	browse	LE	window display	retail	shop	3.238
F	Wardour Street	Saturday	1230-1430	N	browse	LE	window display	retail	shop	3.238
F	Wardour Street	Saturday	1230-1430	N	browse	LE	window display	retail	shop	3.238
F	Wardour Street	Saturday	1230-1430	N	browse	LE	window display	retail	shop	3.238
F	Wardour Street	Saturday	1230-1430	N	browse	LE	window display	retail	shop	3.238
F	Wardour Street	Saturday	1230-1430	N	browse	LE	window display	retail	shop	3.238
F	Wardour Street	Saturday	1230-1430	N	browse	LE	window display	retail	shop	3.238
F	Wardour Street	Saturday	1230-1430	N	browse	LE	window display	retail	shop	3.238
F	Wardour Street	Saturday	1230-1430	N	browse	LE	window display	retail	shop	3.238
F	Wardour Street	Saturday	1230-1430	N	browse	LE	window display	retail	shop	3.238
F	Wardour Street	Saturday	1230-1430	N	browse	LE	window display	retail	shop	3.238
F	Wardour Street	Saturday	1230-1430	R	talk	LE	window display	retail	shop	3.238
F	Wardour Street	Saturday	1230-1430	R	talk	LE	window display	retail	shop	3.238
F	Wardour Street	Saturday	1230-1430	N	browse	LE	window display	retail	shop	3.238
F	Wardour Street	Saturday	1230-1430	R	talk	LE	window display	retail	shop	3.238
F	Wardour Street	Saturday	1230-1430	R	talk	LE	window display	retail	shop	3.238
F	Wardour Street	Saturday	1230-1430	R	talk	LE	window display	retail	shop	3.238
F	Wardour Street	Saturday	1230-1430	R	talk	BE	public private	retail	entrance	3.238
F	Wardour Street	Saturday	1230-1430	R	talk	BE	public private	retail	entrance	3.238
F	Wardour Street	Saturday	1230-1430	N	browse	LE	eatery place	catering	cafe	3.238
F	Wardour Street	Saturday	1230-1430	N	browse	LE	eatery place	catering	cafe	3.238
F	Wardour Street	Saturday	1230-1430	R	talk	LE	window display	retail	shop	3.238
F	Wardour Street	Saturday	1230-1430	R	talk	LE	window display	retail	shop	3.238
F	Wardour Street	Saturday	1230-1430	N	mobile	BE	public private entrance	retail	entrance	3.238





F	Wardour Street	Saturday	1730-1930	R	talk	LE	eatory place	catering	bar	3.238
F	Wardour Street	Saturday	1730-1930	R	talk	LE	pavement edge	transport	edge of street	3.238
F	Wardour Street	Saturday	1730-1930	R	talk	LE	pavement edge	transport	edge of street	3.238
F	Wardour Street	Saturday	1730-1930	N	browse	LE	window display	retail	shop	3.238
F	Wardour Street	Saturday	1730-1930	N	browse	LE	window display	retail	shop	3.238
F	Wardour Street	Saturday	1730-1930	N	browse	LE	window display	retail	shop	3.238
F	Wardour Street	Saturday	1730-1930	N	browse	LE	eatory place	catering	cafe	3.238
F	Wardour Street	Saturday	1730-1930	R	talk	LE	window display	catering	cafe	3.238
F	Wardour Street	Saturday	1730-1930	R	talk	LE	window display	catering	cafe	3.238
F	Wardour Street	Saturday	1730-1930	R	talk	LE	public private entrance	catering	entrance	3.238
F	Wardour Street	Saturday	1730-1930	R	talk	LE	public private entrance	catering	entrance	3.238
F	Wardour Street	Saturday	1730-1930	R	talk	LE	eatory place	catering	bar	3.238
F	Wardour Street	Saturday	1730-1930	R	talk	LE	eatory place	catering	bar	3.238
F	Wardour Street	Saturday	1730-1930	R	talk	LE	eatory place	catering	bar	3.238
F	Wardour Street	Saturday	1730-1930	R	talk	LE	eatory place	catering	bar	3.238
F	Wardour Street	Saturday	1730-1930	R	talk	LE	eatory place	catering	bar	3.238
F	Wardour Street	Saturday	1730-1930	R	talk	LE	eatory place	catering	bar	3.238
F	Wardour Street	Saturday	1730-1930	R	talk	LE	eatory place	catering	bar	3.238
F	Wardour Street	Saturday	1730-1930	R	talk	SE	pavement edge	transport	edge of street	3.238
F	Wardour Street	Saturday	1730-1930	R	talk	SE	pavement edge	transport	edge of street	3.238
F	Wardour Street	Saturday	1730-1930	R	talk	SE	pavement edge	transport	edge of street	3.238
F	Wardour Street	Saturday	1730-1930	R	talk	SE	pavement edge	transport	edge of street	3.238
F	Wardour Street	Saturday	1730-1930	R	talk	SE	pavement edge	transport	edge of street	3.238
F	Wardour Street	Saturday	1730-1930	R	talk	SE	pavement edge	transport	edge of street	3.238
F	Berwick Street	Saturday	0930-1130	N	cigar	BE	public private entrance	retail	shop	3.133
F	Berwick Street	Saturday	0930-1130	R	watch	BE	building facade	retail	building indent	3.133
F	Berwick Street	Saturday	0930-1130	N	browse	LE	window display	retail	shop	3.133
F	Berwick Street	Saturday	0930-1130	N	browse	LE	window display	retail	shop	3.133
F	Berwick Street	Saturday	0930-1130	N	browse	LE	window display	retail	shop	3.133
F	Berwick Street	Saturday	0930-1130	N	mobile	LE	window display	retail	shop	3.133
F	Berwick Street	Saturday	0930-1130	N	browse	LE	window display	retail	shop	3.133
F	Berwick Street	Saturday	0930-1130	R	talk	SE	pavement edge	transport	edge of street	3.133
F	Berwick Street	Saturday	0930-1130	R	talk	SE	pavement edge	transport	edge of street	3.133
F	Berwick Street	Saturday	0930-1130	R	talk	SE	pavement edge	transport	edge of street	3.133
F	Berwick Street	Saturday	0930-1130	R	talk	SE	pavement edge	transport	edge of street	3.133
F	Berwick Street	Saturday	0930-1130	R	talk	SE	pavement edge	transport	edge of street	3.133
F	Berwick Street	Saturday	0930-1130	R	talk	LE	window display	retail	shop	3.133
F	Berwick Street	Saturday	0930-1130	R	talk	LE	window display	retail	shop	3.133
F	Berwick Street	Saturday	0930-1130	R	watch	LE	window display	retail	shop	3.133

[illegible]

F	Berwick Street	Saturday	1230-1430	R	talk	BE	public private entrance	retail	entrance	3.133
F	Berwick Street	Saturday	1730-1930	R	talk	SE	pavement edge	transport	edge of street	3.133
F	Berwick Street	Saturday	1730-1930	R	talk	SE	pavement edge	transport	edge of street	3.133
F	Berwick Street	Saturday	1730-1930	R	talk	SE	pavement edge	transport	edge of street	3.133
F	Berwick Street	Saturday	1730-1930	R	talk	SE	pavement edge	transport	edge of street	3.133
F	Berwick Street	Saturday	1730-1930	R	talk	SE	pavement edge	transport	edge of street	3.133
F	Berwick Street	Saturday	1730-1930	R	talk	SE	pavement edge	transport	edge of street	3.133
F	Berwick Street	Saturday	1730-1930	R	talk	SE	pavement edge	transport	edge of street	3.133
F	Berwick Street	Saturday	1730-1930	R	talk	SE	pavement edge	transport	edge of street	3.133
F	Berwick Street	Saturday	1730-1930	R	talk	SE	pavement edge	transport	edge of street	3.133
F	Berwick Street	Saturday	1730-1930	R	talk	SE	pavement edge	transport	edge of street	3.133
F	Berwick Street	Saturday	1730-1930	R	talk	BE	public private entrance	retail	entrance	3.133
F	Berwick Street	Saturday	1730-1930	R	talk	BE	public private entrance	retail	entrance	3.133
F	Berwick Street	Saturday	1730-1930	R	talk	BE	public private entrance	retail	entrance	3.133
F	Berwick Street	Saturday	1730-1930	R	talk	BE	public private entrance	retail	entrance	3.133
F	Berwick Street	Saturday	1730-1930	R	talk	BE	public private entrance	retail	entrance	3.133
F	Berwick Street	Saturday	1730-1930	R	talk	BE	public private entrance	retail	entrance	3.133
F	Berwick Street	Saturday	1730-1930	R	talk	BE	public private entrance	retail	entrance	3.133
F	Berwick Street	Saturday	1730-1930	R	talk	BE	public private entrance	retail	entrance	3.133
F	Berwick Street	Saturday	1730-1930	R	talk	BE	public private entrance	retail	entrance	3.133
F	Berwick Street	Saturday	1730-1930	R	talk	BE	public private entrance	retail	entrance	3.133
F	Berwick Street	Saturday	1730-1930	R	talk	BE	public private entrance	retail	entrance	3.133
F	Berwick Street	Saturday	1730-1930	R	talk	SE	pavement edge	transport	edge of street	3.133
F	Berwick Street	Saturday	1730-1930	R	talk	SE	pavement edge	transport	edge of street	3.133
F	Berwick Street	Saturday	1730-1930	R	talk	SE	pavement edge	transport	edge of street	3.133
F	Berwick Street	Saturday	1730-1930	N	browse	LE	window display	retail	shop	3.133
F	Broadwick Street	Saturday	0930-1130	N	cigar	LE	window display	retail	shop	2.784
F	Broadwick Street	Saturday	0930-1130	N	cigar	LE	public private entrance	retail	entrance	2.784
F	Broadwick Street	Saturday	0930-1130	N	mobile	BE	building facade	retail	basement fence	2.784
F	Broadwick Street	Saturday	0930-1130	R	watch	LE	window display	retail	shop	2.784
F	Broadwick Street	Saturday	1230-1430	N	browse	LE	window display	retail	shop	2.784
F	Broadwick Street	Saturday	1230-1430	N	browse	LE	window display	retail	shop	2.784
F	Broadwick Street	Saturday	1230-1430	N	wait	BE	public private entrance	retail	entrance	2.784
F	Broadwick Street	Saturday	1230-1430	R	talk	BE	public private entrance	retail	entrance	2.784
F	Broadwick Street	Saturday	1230-1430	R	talk	BE	public private entrance	retail	entrance	2.784
F	Broadwick Street	Saturday	1730-1930	R	talk	BE	pavement edge	transport	edge of street	2.784



F	Broadwick Street	Saturday	1730-1930	R	talk	BE	pavement edge	transport	edge of street	2.784
F	Broadwick Street	Saturday	1730-1930	R	talk	BE	pavement edge	transport	edge of street	2.784
F	Broadwick Street	Saturday	1730-1930	N	browse	LE	window display	retail	shop	2.784
F	Broadwick Street	Saturday	1730-1930	R	watch	BE	pavement edge	transport	edge of street	2.784
F	Broadwick Street	Saturday	1730-1930	R	watch	BE	pavement edge	transport	edge of street	2.784
F	Broadwick Street	Saturday	1730-1930	N	browse	LE	window display	retail	shop	2.784
F	Broadwick Street	Saturday	1730-1930	N	browse	LE	window display	retail	shop	2.784



## Regent Street

### A Guide to Shopfronts & Advertisements

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Department of Planning and Environment, Development Division  
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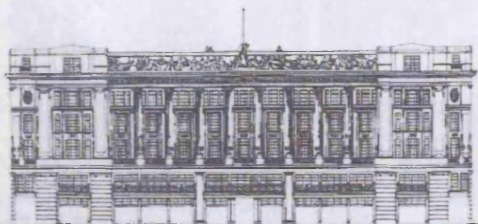


**Above:** Examples of rich classical detailing surrounding the shopfronts in Regent Street.  
**Below and opposite page:** Examples of fine elevational compositions in Regent Street. The character and appearance of these buildings, the way they relate to each other and to the whole street, and their detailing must be considered and respected by designers who prepare alterations or replacement of shopfronts.

## The Building Facades

The shopfronts of Regent Street are set within openings framed by architectural elements of classical detail which are important in unifying the building facades. These

characteristic structural frames and arches, pilasters and friezes should be retained and in a few instances where such features have been removed, they should be reinstated.



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## Introduction

Regent Street was laid out as the central section of a town planning scheme designed in the early nineteenth century by the architect John Nash to connect the Prince Regent's Carlton House with Regent's Park to the north.

It was considered to be one of Europe's finest planning achievements of the period but by the early years of the twentieth century the buildings were considered to be outdated and, in a time when conservation was not widely appreciated, redevelopment ensued.

The general form of the Street was retained and guidelines for redevelopment were established so that individual buildings, some of which were designed by eminent architects of that time, relate to each other in height, materials and classical style of architecture.

The high quality of the Street is reflected by the fact that nearly all of the buildings are Listed Grade II. The Street as a whole was designated as a Conservation Area by the City Council in 1973 and it is the Council's duty to preserve and enhance its character.

## Permission for Alterations

All the buildings in Regent Street (apart from Nos. 289-319 odd) are in the freehold ownership of the Crown Estate.

Thus, in general terms, any proposals for shopfronts, advertisements, etc. need to be submitted to Westminster City Council for planning permission, listed building and advertisement consent and to the Crown

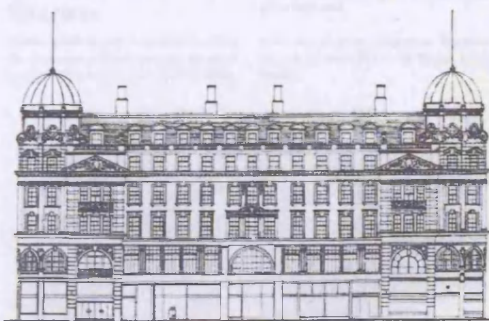


Estate, as ground landlords, for their approval.

These guidelines have been produced by Westminster City Council in consultation with the Crown Estate and English Heritage. They are recommended to anyone who is contemplating any alterations to shopfronts in Regent Street, in order to save time and the expense of submitting proposals which are unlikely to be approved.

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**Note:** The character of Regent Street south of Piccadilly Circus is slightly different to that of the section to the north, and there may be cases where these guidelines are not directly applicable. In such cases, the advice of a design officer of the Westminster City Council's Department of Planning and Environment should be sought.



7

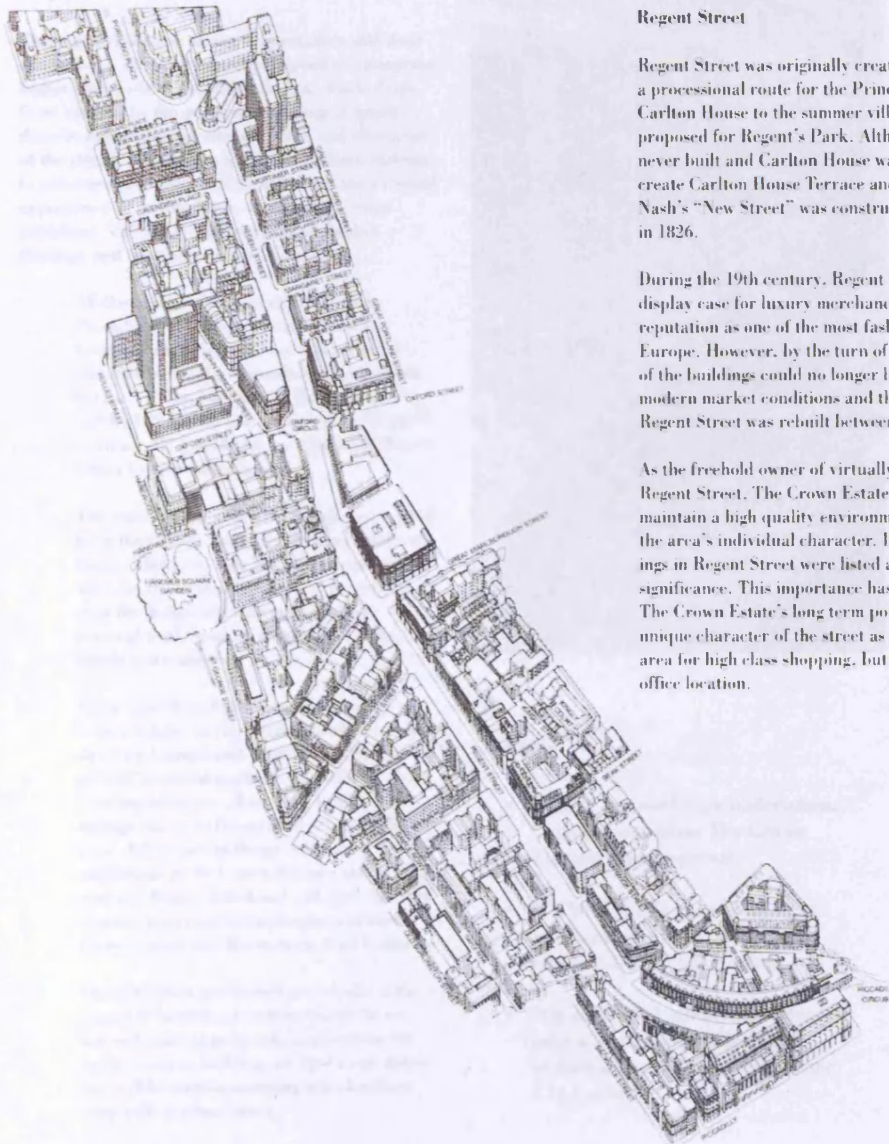






## REGENT STREET

Shopfront & Signs Guidelines



### Regent Street

Regent Street was originally created by John Nash as a processional route for the Prince Regent, from Carlton House to the summer villa which was proposed for Regent's Park. Although the villa was never built and Carlton House was demolished to create Carlton House Terrace and Waterloo Place, Nash's "New Street" was constructed and completed in 1826.

During the 19th century, Regent Street became a display case for luxury merchandise and gained its reputation as one of the most fashionable streets in Europe. However, by the turn of the century, many of the buildings could no longer be adapted to meet modern market conditions and the majority of Regent Street was rebuilt between 1910 and 1930.

As the freehold owner of virtually the whole of Regent Street, The Crown Estate seeks to create and maintain a high quality environment whilst retaining the area's individual character. In 1975, the buildings in Regent Street were listed as a sign of their significance. This importance has been reflected in The Crown Estate's long term policies to retain the unique character of the street as predominately an area for high class shopping, but also an important office location.

Illustration by GAO International





## 2.0 Required Consents

*Sculpted Frieze,  
Liberty & Co.,  
208-222 Regent Street*



The following sets out a brief summary for the various consents which should be obtained by lessees, but the list may not be exhaustive. Westminster City Council has powers of enforcement in order to seek the removal of unauthorised and unacceptable works. The Crown Estate will also take action.

### 2.1 Landlord's Consent

The Crown Estate's written consent is required before any works are undertaken of a structural nature to the building, to the shopfronts or other matters relating to the external appearance. See procedures in next section.

### 2.2 Planning Consent

Required from Westminster City Council for any alteration works which alter the appearance of the building. Six copies of plans should be submitted.

### 2.3 Listed Building Consent

Required from Westminster City Council for any alteration which would affect the character of the listed building, internally or externally, including relatively small-scale changes to windows and decorative detail, painting, and alterations to the interior of the building. Four sets of plans should be submitted. Westminster City Council will consult English Heritage in considering applications. It is a criminal offence to carry-out works before consent is given.

### 2.4 Building Regulations

Consents required where works have structural implications or alter or materially affect a means of escape.

### 2.5 Advertisement Regulations

Consent is required for illuminated signage under the Town & Country Planning (Control of Advertisements) Regulations 1992. Consents are usually given for five years.

### 2.6 Conservation Area Consent

Required where a building is not listed but located within a conservation area and it is proposed to alter features which contribute to its character or where demolition is proposed. Proposals should preserve or enhance the character or appearance of the conservation areas. It is an offence to carry-out works before consent is granted.

### 2.7 Fire Certificate

All works must comply with current fire regulations and all necessary fire certificates must be obtained.

### 2.8 Environmental Health

The requirements will normally be considered within the terms of a planning consent, but lessees must ensure that all requirements are met.

### 2.9 Scaffolding and Hoardings

Consent for these must be secured from the Crown Estate, Westminster City Council (and when appropriate the Metropolitan Police).

## 3.0 Procedures

Any proposal for alterations must be submitted for prior approval to the Crown Estate and works must not be commenced until this approval has been obtained. Statutory approvals may also be required. Fees will be levied for the consideration of each proposal by The Crown Estate's managing agents and for any necessary legal documentation.

**3.1** In general, the drawings should identify the alterations to be made and the materials proposed. The greater the detail shown will avoid need for conditional consent and subsequent approvals. Poor quality drawings and inconsistencies between drawings will delay the consideration of proposals.

**3.2** There are three stages prior to any works being undertaken, as follows.

### STAGE A

**3.3** An outline design concept and programme should be prepared and submitted to The Crown Estate's managing agents for an "in-principle" approval. A response will normally be given within two weeks if sufficient information is provided.

**3.4** Pre-application discussions should also be considered with the relevant statutory body.

### STAGE B

**3.5** When "in-principle" approval is received for Stage A, detailed drawings will then be required. Three copies of the Stage B drawings should be submitted to The Crown Estate's managing agents. A response will normally be given within two weeks. This submission will depend on the type of alterations to be undertaken but should include:

- *detailed shopfront elevation and sections showing at least the windows of the storey above the ground floor, ends of any adjacent shopfronts or return frontages (scale 1:20);*
- *detailed proposals for all signs and lettering, including colour scheme, typeface and method of illumination (1:20);*
- *details showing shopfront frame and junctions with landlord's finishes and mouldings (1:5);*

- *detailed shop-fitting design with layout plans at all levels (1:50);*

- *full shopfront details, including lighting, blinds, alarm boxes etc;*

- *drawings and calculations showing loadings to ensure that structural works do not affect fabric of the building;*

- *drawings and specifications to describe the tenant's services, installations and connections;*

- *a sample of all new materials to be used on the exterior;*

- *colour photographs of existing elevations and the wider context of the streetscene;*

- *a site inspection may be necessary and access may be required.*

**3.6** Planning, listed building, building control and advertisement regulations applications (as appropriate) should also be made to the relevant section of Westminster City Council. Copies of all statutory approvals must be provided to The Crown Estate. A guide to the necessary consents is set out in Section 2.

**3.7** It is a criminal offence to carry out any works to a listed building without the prior consent of Westminster City Council. The tenant is responsible for obtaining all relevant statutory consents and meeting their respective requirements. The Stage B approval from The Crown Estate must include all aspects covered by the statutory approvals.

### STAGE C

**3.8** Once Stage B drawings are approved, and all statutory consents have been obtained, a further four copies of all drawings and specifications should be submitted to the managing agents. A letter of approval or a formal licence will be issued on behalf of The Crown Estate.

**3.9** Works may now proceed in line with this approval. Inspections may be made at the discretion of The Crown Estate.





































## **APPENDIX E – GLOSSARY, CLASSIFICATION AND DEFINITION**

**Accessibility** – is the spatial function of streets. It is measured through the capacity of streets to accommodate and distribute static activities within the local and global network of streets.

**Dynamic Activities** - the moving or walking pedestrians

**Interaction** - is primarily associated with static pattern of activities. Interaction exists when two or more subjects (i.e people and people, people and the environment) interact directly and indirectly with one another.

**Liveliness** - the successful functioning of the street, which incorporates people performing static activities, such as sitting, talking, and eating, and dynamic walking and movement activities'. This incorporates the social, socio-physical, and spatial aspects of people in the street. Liveliness is achieved by successfully balancing the sociability and the accessibility of the street, where sociability is the social function of the street as measured through the capacity of the street to accommodate static activities; and accessibility is the spatial function of the street, or the ability of the street to accommodate and distribute activities within its local and global network

**Sociability** – is the social function of streets. It is measured through the capacity of streets to accommodate static activities.

**Static Activities or Static Behaviour** – people's behaviour such as sitting, standing, gazing and talking.

**Street** - a linear physical entity of an urban component, which forms the space between buildings. It is accessible to people and commonly regarded as a conduit for connecting the dynamic moving activities in a city, of traffic and pedestrians. It is also a linkage able to transform itself as a setting; a sociable place, which is capable of absorbing static pedestrian activities from which the success or liveliness of streets can be enhanced and within which are implicated the process of interaction between people, and between people and their environment.

**Street Efficiency** - the ability of street to arrive at a balanced used between static and dynamic activities of people; therefore the balance between sociability and accessibility.

**Topography** - is the location in the physical layout of streets on which static activities occupy.

**Topology** - is the spatial connectivity of the topographies of particular local street spaces to other street spaces within the global context of urban spaces.